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Mancheste

Manchester, N. H. Ordinances

THE

BUILDING CODE

OF THE

CITY OF MANCHESTER

NEW HAMPSHIRE

FINAL ENACTMENT BY THE
BOARD OF MAYOR AND ALDERMEN
JANUARY 2, 1911

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BUILDING CODE

TITLE I

ADMINISTRATION AND SUPERVISION

Section 1. Department of Buildings

There is hereby created and established an executive department of the municipal government of the city of Manchester which shall be known as the Department of Buildings.

Sect. 2. Organization

The Department of Buildings shall consist of the following officers and employes:

An Inspector of Buildings; A Clerk.

Sect. 3. Inspector of Buildings

The Board of Mayor and Aldermen shall, in the month of January, biennially, elect an Inspector of Buildings, who shall be a competent person with practical experience in the construction of buildings, who shall be head of the Department of Buildings and shall have the management of all matters and affairs pertaining thereto. He shall receive such compensation for his services as shall be determined by the Board of Mayor and Aldermen, and shall hold office for the term of two years and until his successor is appointed and qualified.

Sect. 4. Appointment of Subordinates

The Inspector of Buildings shall appoint all subordinate officers and employes of said department for the term of two years, but may remove them for inefficiency, neglect of duty, or malfeasance in office. All officers and employes of said department shall be subject to such rules and regulations as shall be prescribed by the Inspector of Buildings, and said officers and employes shall do and perform such work and duties as he may require. They shall receive such compensation for their services as shall be determined by the Board of Mayor and Aldermen.

Sect. 5. Entire Time to be Devoted

The Inspector of Buildings and all officers and employes of said department shall give their entire time to the performance of their duties thereof and shall not, during their term of office, be employed or engaged, directly or indirectly, in any building business, or enter into any contract for building for others, or for furnishing materials, plans or specifications for others.

Sect. 6. Duties of Inspector

The Inspector of Buildings shall be charged with the survey and inspection of buildings and with the enforcement of the provisions of this Code, and all other laws and ordinances relating to the erection, *construction,* alteration, repair, removal and safety of buildings, electric signs, elevators, heating apparatus, gas fitting and electric wiring of buildings, fire doors, window shutters and fire escapes. He shall pass upon all questions relating to the strength and durability of buildings and building materials, examine and approve all plans and specifications therefor before a permit shall be issued and shall sign and issue all permits, certificates and notices required to be issued. He shall promptly acknowledge the receipt of all official communications, notices and reports.

Sect. 7. Notice to Inspector

A postal given the owner or his agent, when granted a permit, shall be sent the Inspector of Buildings when foundations, cellar walls and underpinning are built ready for inspection; and all such work shall be kept free and open to inspection until approved by the said inspector.

A postal given the owner or his agent, when granted a permit, shall be sent the Inspector of Buildings when frame, chimneys, fire stops, furnace or steam pipes and electric wiring are built and in place ready for inspection, and all such work shall be kept open to inspection until approved by the said Inspector.

Any work that is covered before being inspected and approved by the Inspector of Buildings shall, by his order, be uncovered, and the owner or contractor shall bear the expense.

Sect. 8. Records

The Inspector of Buildings shall keep a book or books, or card filing system, in which shall be recorded the location and character of every building structure or other work for which a certificate or permit is issued and a copy of every report of inspection of such building, structure or work, so arranged that the full history of the various inspections of such building, structure or work, shall appear therein in consecutive order. All original notes or records made by the Inspector in pursuance of duty shall be signed, indexed and turned over to the department for permanent file therein.

Sect. 9. Certificate Issued to Owner

Upon the completion of work for which a permit has been issued, the Inspector of Buildings shall, upon the request of the owner of the premises in whose name the permit is issued, present to said owner a sworn certificate stating that the building has been constructed in strict compliance with the requirements of the Building Code and the plans and specifications as approved by the Inspector of Buildings, if such be the case. If the work does not conform with the regulations or the plans and specifications as aforesaid, the Inspector shall state explicitly in said certificate in what particulars and to what extent deviations have been made. A copy of all certificates issued shall be kept on file in the office of the Department of Buildings. The owner shall be charged a fee of two dollars for the issuance of said certificate, ich fee shall be turned into the treasury of the of Manchester.

Sect. 10. Semi-Annual Report

The Inspector of Buildings shall keep or cause to be kept, a record of the number, class, grade, and cost of every building erected or remodeled in the city during his term of office for which certificates or permits were issued, and shall make a detailed report of his doings to the Board of Mayor and Aldermen at least as often as once in six months, showing the number of certificates or permits granted and the number refused and such other facts as may be of importance relating to the discharge of his duties including the dates of all inspections made.

Sect. 11. Monthly Report

He shall also make a monthly report to the Board of Assessors on or before the tenth day of each month, on suitable blanks furnished by the assessors, of the permits and certificates issued and the total cost of structures erected and remodeled within the city of Manchester during the preceding month.

Sect. 12. Annual Estimate

The Inspector shall, during the month of January of each year, make and file with the Board of Mayor and Aldermen a carefully prepared and itemized statement of the amount of money needed in the Department of Buildings, for all purposes for the ensuing year.

Sect. 13. Report to City Solicitor

The Inspector of Buildings shall make a written report of all violations of the orders of said Inspector or of the ordinances, with the enforcement of which, he is charged; to the City Solicitor who shall cause the immediate prosecution of any person or persons making such violation.

Sect. 14. Permit to Encroach Under Street

No permit shall be granted by the Inspector of Buildings to erect or repair any building, vault, sidewalk elevator, lift, chute, coal-hole, or any other alteration or extension that shall encroach under the street line or for making any opening in any street or public property in connection with any building operations by which the pavement or curb in any adjoining street or thoroughfare is liable to be taken up or endangered by caving, settling, or for any other cause until the owner has filed with the Inspector of Buildings a written certificate from the Board of Mayor and Aldermen that the owner of the premises where such building operation is to take place has agreed in writing to indemnify the city for all damages which may be recovered from the city for any injury either to person or property caused by the construction or maintenance of such building alteration or extension. All work connected with such building operations shall be under the supervision and subject to the approval of the Street and Park Commissioners.

Sect. 15. Permit for Hazardous Buildings

No permit shall be granted by the Inspector of Buildings for the erection or remodeling of a building to be used as a steam mill, furnace, foundry, blacksmith's shop, or house for storing powder until the owner has filed with the Inspector of Buildings a written certificate stating that the owner has received a license therefor from the Board of Mayor and Aldermen.

Sect. 16. Name

The name and title of this ordinance is The Building Code and it shall be known and cited as such

Sect. 17. Liberally Construed

The Building Code is hereby declared to be a remedial ordinance and shall be liberally construed, so as to secure the beneficial interests and purposes intended, and shall apply to all parts of the city.

Sect. 18. Object and Scope

The object and scope of this ordinance are the governing and regulating of the construction and erection, remodeling, alteration, repairing, moving and removal and securing of buildings of any description in the city of Manchester, and providing for the safe use of them, and providing for all other matters pertaining to the maintenance of buildings and building operations in said city.

Sect. 19. Must Comply with this Code

It shall be unlawful and subject to the penalties hereafter provided for any person, persons, firm or corporation to construct, erect, repair, alter, add to, move or remove any building or portion thereof, or to carry on building operations in the city of Manchester, except in compliance with the terms and provisions of this Code.

Sect. 20. Powers of Inspector of Buildings

The Inspector of Buildings shall have the authority to stop the construction of any building, or the making of any alterations or repairs of any building, within the city, when the same is being done in a reckless or careless manner, or in violation of this Code or any ordinance of this city, and to order, in writing or parole, any and all persons in any way or manner whatever engaged in so constructing, altering, or repairing any such building, to stop and desist therefrom; and to have the authority, if he finds any building or part thereof in an unsafe condition and so that said unsafe condition may be averted by the immediate application of precautionary measures, to cause such precautionary measures to be taken, and all work necessary to render said building or any part thereof safe to be done after having served written notice upon the owner, lessee, occupant, or agent of said building personally.

Sect. 21. Buildings Rendered Dangerous by Fire

When any part of a building damaged by fire appears to be in a dangerous condition, the Chief of the Fire Department shall notify the Inspector of Buildings. Said Chief and Inspector shall forthwith make a thorough examination of the building; and such action shall be taken by the owner or owners immediately on receiving notice, as the decision of the said officials shall direct.

Sect. 22. Examination of Buildings

The Inspector of Buildings or persons assisting him are hereby empowered, and whenever in their judgment occasion may require, they may enter into and upon any building, staging, other structure, or premises for the purpose of examining the same in relation to its proper ventilation, sanitation, and safety; and the Inspector of Buildings may make such orders in reference thereto as to him seems proper to secure public and private safety and to the fulfillment of the provisions of this Code; and may make examinations of any buildings or premises to investigate divergence from or failure to comply with the provisions of this Code. And if the owner or lessee of such building, staging, or structure shall fail or neglect to comply with the requirements of such orders, the said Inspector of Buildings, may enter upon such premises, hire necessary help, and perform such work as is necessary in the judgment of the Inspector of Buildings to be immediately performed, so as to secure public and private safety. The expenses so incurred shall be a lien on the property, and if the same remain unpaid sixty days or more after legal notice, which shall be given by the Tax Collector, that the same is due, an addition of three-quarters of one per centum shall be made to the amount of such assessment or expense for each month the same shall so remain unpaid after said lien is filed, and the same shall be collectible as a part of such assessment or expense, and be and remain a lien on such property in like manner and subject to the same modes of enforcement and collection as the principal sum to which the same is added.

Sect. 23. Plans to be Filed Before Commen ing Operations

Before the erection, construction, or alteration any building or part thereof, or shed, extension, piazza is commenced, the owner, architect, or buil shall file with the Inspector of Buildings a clear sta ment in writing of the proposed improvement, bui ing, or alteration, together with two copies of t plans and specifications of the same, one set to filed in the office of the Inspector of Buildings, t other to be officially stamped, returned and used the building, except where the cost as estimated said Inspector does not exceed one hundred dolla which statement shall be accompanied by a situati plan, rendered in ink, showing the exact size a shape of the lot and the exact size, shape and lo tion of the building referred to in the statement, wi reference to the distance from lot lines, street li and other buildings within a distance of twenty fe Situation plan shall also show the street grade wh possible. Said statement and situation plan to rem on file and a part of the records of the Departme of Buildings; all other plans and specifications sh remain on file with the Department of Buildings a period of not less than six months, after the co pletion and issue of the certificate of acceptance the building.

Sect. 24. Drawings and Specifications

All plans and drawings which are to be filed w the Inspector of Buildings, as provided in this Co shall be drawn to a scale of not less than one-eig of an inch to the foot on paper or cloth, in ink or some process that will not fade or obliterate. All distances and dimensions must be accurately figured and drawings made explicit and complete, showing the sewerage and drain pipes, and location of all plumbing fixtures, gas mains and meters, electric wiring and heater boilers and furnaces, within such building Each set of plans presented for permit must be accompanied by specifications describing all materials to be used in the proposed building, and both the plans and specifications must be approved by the Inspector of Buildings, and officially stamped by him, before a permit is granted. And no detail or working drawing at a lesser scale than one-half inch to one foot shall be submitted. Special drawings to illustrate any particular point or points shall be furnished when required.

Sect. 25. Reference to Building Code

When a specification has occasion to refer to the Building Code for any applied method, manner or detail of construction, or material to be used, it shall be made by reference to the section or sub-section, and if such section or sub-section contains more than one subject, the subject or part thereof referred to shall be quoted in full, and any specifications in which general expressions are used to the effect that the work shall be done, or the plans carried out to the satisfaction or approval of the Inspector of Buildings, or in accordance with the Building Code, shall be deemed to be incomplete or imperfect.

Sect. 26. Plans, etc., not to be Altered

It shall be unlawful and subject to the penalties *hereinafter provided* to erase, alter, or modify any line, figures, or coloring contained upon drawings or specifications stamped by the Inspector of Buildings or filed with him for reference. If during the progress of the execution of such work it is desired to deviate in any manner affecting the construction or other essentials of the building from the terms of the application, drawings, plans, or specifications as filed, notice of such intention to alter or deviate shall be given in writing to the Inspector of Buildings, and his written consent must be obtained before such alterations or deviations may be made. Alterations or deviations in buildings which do not involve any change in their structural parts or ways of ingress or egress, may be made without permission from the Inspector.

Sect. 27. Permits Good for Six Months

If, after a permit for the erection, alteration, or repair of any building shall be granted, the operation called for by the said permit shall not be commenced within six months from the date of said permit, a new permit shall be taken out by the owner or his agent before any work on any such building is carried on or commenced; unless the commencement of such work has been delayed on account of unavoidable occurrence, of which the Inspector of Buildings shall be the sole judge.

Sect. 28. Buildings Reported Unsafe

If, in the city of Manchester, any building or part of a building, staging, or other structure, or anything attached to or connected with any building or other structure, shall from any cause, be reported unsafe, the Inspector shall examine such structure, and if, in his opinion, the same be unsafe, he shall order the occupants thereof to immediately vacate and immediately notify the owner, agent or other person having an interest in said structure to cause the same to be made safe and secure, or that the same be removed, as may be necessary. The person or persons so notified shall be allowed until twelve o'clock noon of the day following the service of such notice in which to commence the securing or removal of the same; and he or they shall employ sufficient labor to remove or secure the said building as expeditiously as can be done; provided, however, that in case where the public safety requires immediate action, the said Inspector may enter upon the premises, with such workmen and assistants, as may be necessary in his judgment, and cause the said unsafe structure to be shored up, taken down, or otherwise secured without delay; and a proper fence or boarding to be put up for the protection of the passers-by.

Sect. 29. Cost of Making Safe—How Collected

The Inspector of Buildings, shall report the cost and expense of such necessary work as specified in the preceding section to the Tax Collector of the city of Manchester, who shall assess the amount thereof upon the lot of ground whereon such structure stands or stood, and unless the said assessment is paid within sixty days from the service of notice thereof on the owner or agent or other person having an interest in said premises, an addition of three-quarters of one per centum shall be made to the amount of such assessment or expense, for each month the same shall so remain unpaid after said lien is filed, and the same shall be collectible as a part of such assessment or expense, and be and remain a lien on such estate, in like manner and subject to the same modes of enforcement and collection as the principal sum to which the same is added, and shall be collected as general taxes are collected in said city; but said assessment shall be without prejudice to the right which the owner may have to recover from any lessee or other person liable for repairs.

Sect. 30. Work Ordered Stopped

The Inspector of Buildings shall have authority to order stopped and suspended any and all work or building operations of any character whatsoever, which he deems being done or constructed in a careless, unsafe, or unsanitary manner; and if the orders of said Inspector are not obeyed and the work so stopped or suspended, the contractor, foreman, person or persons so disobeying such orders shall be liable to arrest, and upon conviction in the police court of the city of Manchester, shall be fined not exceeding ten dollars for every day such orders continue disobeyed; provided, however, that any person who deems himself aggrieved by such order or orders of the said Inspector, shall have the right of appeal to the superior court either in term time or vacation, and said court shall make such orders thereby as justice may require, but pending the rendition of said judgment or decision, all building operations and work complained of as aforesaid shall be suspended and held in abeyance, under the penalty herein above *provided.*

TITLE II

DEFINITIONS

Sect. 31. Alterations

Any change, addition, or modification in construction.

Sect. 32. Apartment House

A building which shall be designed for, or used as a residence for three or more families or households, living independently of each other, with independent plumbing facilities.

Sect. 33. Areas

Open sub-surfaces adjacent to a building.

Sect. 34. Attic Story

A story situated wholly or partly in the roof.

Sect. 35. Basement

A story suitable for occupancy, partly, but not more than one-half below the grade.

Sect. 36. Bay Window

A window projecting from the outer face of a wall and built upon a foundation.

Sect. 37. Building

Any structure erected by art and fixed upon or in the soil, composed of several pieces, and designed for use in the position in which so fixed.

Sect. 38. Building Line

The line formed by the intersection of the outer face of the enclosing walls of a building and surface of the ground. The "sill line."

Sect. 39. Building Owner

The owner, agent, or trustee of the building or premises under consideration, construction, alteration, removal, repair, or effected under this Code.

Sect. 40. Cellar

That portion of a building below the first tier of floor beams or joists if wholly or partly below the grade of the adjoining street or ground and not suitable for habitation under the provisions of this Code.

Sect. 41. Columns

Isolated, perpendicular supports of wood, stone, iron, steel, or other structural material.

Sect. 42. Court

An open, unoccupied space, other than a yard, on the same lot with a building. A court not extending to the street or yard is an Inner Court; a court extending to the street or yard is an Outer Court; if it extends to the street, it is a Street Court; if it extends to the yard it is a Yard Court.

Sect. 43. Factor of Safety

The quotient obtained by dividing the breaking d by the safe load.

Sect. 44. First Story

The story the floor of which is at or first above the level of the sidewalk or adjoining ground; the other stories to be numbered in regular succession, counting upward.

Sect. 45. Footings

The first course or courses laid at the bottom of a foundation wall or pier.

Sect. 46. Foundations

The lowest walls or supports of a building.

Sect. 47. Frame Building

A building of which the exterior walls are constructed of wood. Buildings of wood construction and partially or entirely veneered with four inches of brick work or other masonry shall be deemed frame buildings. Also wood frames covered with metal shall be deemed frame buildings.

Sect. 48. Grade

The surface of the ground, court or sidewalk adjoining the building. The established grade is the grade of the street fixed by the Engineering Department of the city of Manchester. The natural grade is the undisturbed natural surface of the ground.

Sect. 49. Girder

A horizontal structural support which carries floor beams or joists, or walls over openings, or other loads.

Sect. 50. Ground Floor

The floor which is first above and near the level of the grade.

Sect. 51. Hall

(a) A Public Hall is a hall corridor, or passageway used in common by all the occupants within a building.

(b) A Stair Hall includes the stairs, stair landings, and those portions of the public halls through which it is necessary to pass in going between the entrance floor and the roof.

(c) Assembly Hall includes all churches, convention halls, auditoriums, exposition buildings, music halls, railroad depots, or that part of any building containing an assembly room for a concourse of more than one hundred people.

Sect. 52. Height of Building

The perpendicular distance measured on the center line of its principal front from the established or natural grade to the highest point of the building. If the total fall of grade on any side extends ten feet in the length of the building, the height shall be measured at the lowermost corner; and when the height of a building is limited, it shall be terraced or stepped off at every ten feet change of grade.

Sect. 53. Height of a Wall

The height of a wall is measured from its base line -ther at the grade or at the top of a girder to the top of the coping or the center of the highest gable; foundation and retaining walls are measured from the grade downward.

Sect. 54. Height of a Story

The perpendicular distance from top to top of two successive tiers of floor beams or joists. That portion of a story immediately under the roof whose inside heights from floor to plate is not less than two feet and does not exceed five feet shall constitute a Half Story.

Sect. 55. Hotel

Any building or part thereof designed to be used for supplying shelter and food or shelter to residents or guests and having a public dining room, cafe, or office, or either.

Sect. 56. Incombustible Roof or Non-Combustible Roof

On buildings and sheds, a roof covered with an incombustible material, not subject to ignition or combustion from sparks of fire on the surface of the roof, shall be considered an incombustible or non-combustible roof.

Sect. 57. Semi-Combustible Stud Partition

One plastered on both sides upon metal lath or wire cloth for the full height, and fire stopped between the studs with incombustible material eight inches high from the floor and at the ceiling.

Sect. 58. Incombustible Material

When referred to as a structural material—brick, terra cotta, concrete, iron, steel or sheet metal, used alone or in combination with one another.

Sect. 59. Inspector

Inspector shall mean the Inspector of Buildings of the city of Manchester.

Sect. 60. Length of a Building

Its greatest lineal dimension.

Sect. 61. Loads on Building

(a) Dead Load shall consist of the weight of walls, floors, roofs, partitions, and all permanent construction.

(b) Live Load shall consist of all imposed, fixed, or transient loads, other than dead, due to the use and occupancy of the building and its exposure to wind pressure.

Sect. 62. Lodging House

A building designed or used for supplying shelter to lodgers, but in connection with which no public cafe or dining room is maintained.

Sect. 63. Lot Line

The line of demarcation between different lots or parcels of ground, not including the demarcation between any lot or parcel of ground and a water nt, public park or thoroughfare.

Sect. 64. Lintel

A horizontal member of construction spanning an opening, with the ends resting on the masonry.

Sect. 65. Mill Construction

That form of construction in which the enclosing walls and roof covering are made of. incombustible materials, with doors, and windows and frames of wood, interior columns and girders carrying floor loads and the floor and roof systems composed of heavy timbers, placed with wide spacing, heavy planking and no concealed air spaces.

Sect. 66. Ordinary Construction

Enclosing walls and roof covering of incombustible material, wood joists, wood stud partitions with wood or iron posts and beams and the interior structural members not protected by fire resisting coverings.

Sect. 67. Owner

Any person, firm, corporation, or authorized agent for the same, controlling property in the city of Manchester.

Sect. 68. Office Building

Shall mean and include every building which shall be divided into rooms above the first story and be intended and used for office purposes, and no part of which shall be used for living purposes, except for the janitor and his family.

Sect. 69. Oriel Window

A projecting window similar to a bay window but carried on brackets or corbels.

Sect. 70. Partition

An interior sub-dividing wall.

Sect. 71. Piers

Isolated masses of brickwork or masonry forming supports.

Sect. 72. Post

Isolated perpendicular wooden supports.

Sect. 73. Public Building

All buildings devoted in whole or in part to the use of the general public, either for the purposes of state or places of assemblage.

Sect. 74. Repairs

The reconstruction or renewal of any existing part of a building for the purpose of its maintenance, and not made, in the opinion of the Inspector, for the purpose of converting the building substantially into a new one.

Sect. 75. Reinforced Concrete

Portland cement concrete in which are imbedded steel or wrought iron members to take tension or earing strains.

Sect. 76. Shed

A rough or unfinished structure for storage, or an open structure for temporary shelter.

Sect. 77. Skeleton Construction

That form of construction in which all loads and stresses are transmitted to the foundations by a skeleton or framework of metal.

Sect. 78. Story

The space from top to bottom of any two successive tiers of floor beams or joists.

Sect. 79. Street Line

The line of demarcation between a public thoroughfare and the abutting property; the inner line of the sidewalk of the required width.

Sect. 80. Show Window

A store window in which goods are displayed.

Sect. 81. Tenement House

Any house or building, or portion thereof, which is rented, leased, let or hired out, to be occupied, or is arranged or designed to be occupied, or is occupied as the home or residence of three families or more, living independently of each other, and doing their cooking upon the premises, and having a common right in the halls, stairways or yards.

Sect. 82. Theatre

A building or portion of a building in which it is designed to make a business of the presentation of dramatic or other performances for the entertainment of spectators, and having a permanent stage for said performances which can be used for scenery and other stage appliances.

Sect. 83. Thickness of Wall

The minimum thickness of such wall exclusive of air space.

Sect. 84. Underpinning

That exposed portion of masonry above the grade to the under side of the sills of a frame building.

Sect. 85. Vault, Sidewalk

An underground construction beneath the sidewalk.

Sect. 86. Veneer

The outer facing of brick, stone, concrete, tile, or metal of an inclosing wall, used for the protection or ornamentation of the backing.

Sect. 87. Veneered Building

A frame structure the walls of which are covered above the foundation wall with brick, stone or other *asonry four* inches in thickness.

Sect. 88. Walls

(a) *Apron.*—That portion of an inclosing wall between the door and window sills of a story and the door and window heads or lintels of the next story below.

(b) *Bearing Wall.*—The wall on which either or both the floor and roof construction rest.

(c) *Curtain Wall.*—The inclosing wall of an iron or steel skeleton frame, or the non-bearing portion of an inclosing wall between piers.

(d) *Division Wall.*—The bearing wall running from front to rear sub-dividing a building.

(e) *Dead Wall.*—A wall without openings.

(f) *External Wall.*—Any outer wall of a building other than a party wall.

(g) *Fire Wall.*—The coping or parapet walls above the roof. Also any division or partition wall dividing spaces into limited areas for fire protection purposes.

(h) *Foundation Walls.*—That portion of an inclosing wall below the first tier of floor joists or beams nearest and above the grade line; and that portion of any interior wall below the basement or cellar floor.

(i) *Length of.*—The distance between the centers of adjoining front, rear, cross, or return walls, irrespective of any intermediate steel or light combustible or non-return brick partition.

(j) *Partition Wall.*—Any interior wall of a building.

(k) *Party Wall.*—Every wall used, or built in order to be used, as a separation of two or more buildings on the same premises. A wall built upon the dividing line between adjoining premises for their common use.

(l) *Retaining Wall.*—A wall built to resist lateral pressure.

(m) *Thickness of Wall.*—The minimum thickness measured on the bed. In measuring the thickness of walls the air space, if any, shall not be included.

Sect. 89. Warehouse

A building used for the storage of merchandise.

Sect. 90. Width of a Building

Its least lineal dimension.

Sect. 91. Wire Glass

Wire woven not less than one-quarter of an inch thick. The term "fireproof glass," when used in connection with wire glass, means hammered glass not less than one-half an inch thick.

Sect. 92. Yard

An open unoccupied space on the same lot with a building, between the extreme rear line of the building and the rear line of the lot.

TITLE III

FIRE LIMITS

Sect. 93. Where Located

The fire limits of the city of Manchester shall be that portion of the city on the east side of the Merrimack river included within the following limits; to wit:

Beginning at the intersection of the center line of Harrison street with the center line of Pine street; thence westerly by the center line of Harrison street to the center line of Elm West Back street or Hampshire Lane to the center line of Pleasant street; thence westerly by the center line of Pleasant street to the right of way of the Boston & Maine Railroad; thence in a southeasterly direction along the right of way of the Boston & Maine Railroad to a point on the center line of Hayward street, extended westerly; thence in an easterly direction by the line extended and the center line of Hayward street to the intersection of the center line of Hayward street with the center line of Pine street; thence northerly by the center line of Pine street to the intersection of the center line of Harrison street at the point of beginning.

And on the west side of said river, that portion of the city bounded as follows;

Beginning at the intersection of the center line of Main street with the center line of McGregor street at the north terminus of McGregor street; thence westerly by an angle of ninety degrees to the easterly line of Main West Back street; thence southerly by the east line of Main West Back street to the southerly line of Wilton street; thence southerly on a line one hundred feet from and parallel to the west line of Main street and South Main street to the center line of Mast street; thence southeasterly from the center of Mast street to a point one hundred feet from the east line of South Main street and on the center line of Log street; thence northerly on a line one hundred feet east and parallel to South Main and Main streets to a point in the center line of Douglas North Back street; thence westerly by the center line of Douglas North Back street to the centre line of Main street; thence northerly by the center line of Main street to the intersection of the center line of McGregor street; thence northeasterly by the center line of McGregor street to the center line of West Bridge street; thence northwesterly by the center line of McGregor street to the point of beginning.

Sect. 94. Class of Buildings

No person, firm or corporation shall erect, enlarge, elevate, alter, or otherwise change any building or part of a building within the fire limits, as the said limits now are or may hereafter be established, unless the outer walls and the covering of the roof be composed wholly of fireproof materials; and the use of sheet metal or four inches of brick for the covering of outside walls of new buildings or new additions to old buildings within the fire limits is prohibited. Nothing herein, however, shall be understood to prevent the erection of temporary buildings or the remodeling of buildings as hereinafter stated in this Title, or to prohibit the use of approved tar or asphalt and gravel or slag and asbestos roofs, or other roofings equivalent to them, but such roofings must be approved by the Inspector of Buildings.

All roof coverings and repairs of roof coverings within the fire districts and the district bounded by Harrison street on the north, Auburn street on the south, Union street on the east, and Pine street on the west shall be made of materials as stated above, whenever in the opinion of the Inspector of Buildings such repairs shall be made.

Sect. 95. Frame Buildings Damaged

Every frame building now existing within the fire limits, which may hereafter be damaged to an amount not greater than fifty per cent of the cost of a similar new building, exclusive of the valuation of the foundation thereof, at the time of such damage may be repaired or rebuilt; but if such damage shall amount to more than fifty per cent as aforesaid, then such building shall not be repaired or rebuilt but shall be torn down and removed.

Sect. 96. Temporary Frame Buildings

Temporary observation stands, booths, and platforms may be erected within the fire limits upon permits issued by the Inspector of Buildings. One story frame buildings and sheds may be erected under the building permit for the uses of builders, within the limits of lots whereon buildings are in course of erection or adjoining vacant lots but shall be demolished upon the completion of said building.

Sect. 97. Fuel and Shelter Sheds

A frame shed with incombustible wall and roof *covering for fuel* or for wagon storage may be erected on the rear of any lot or premises. The walls of such shed shall not be sheathed or boarded but the incombustible covering shall be applied directly to the frame to the satisfaction of the Inspector of Buildings. Such sheds shall not exceed eleven feet at the highest point thereof and not to cover or exceed, including all wood frame sheds on the premises twenty-five hundred square feet ground area nor shall such shed encroach on the space set apart for light and ventilation as hereinafter provided by this Code. No chimney shall be erected in such sheds and no portable forge or heating appliance of any kind will be permitted therein.

Sect. 98. Stairs of Wood

Outside stairs constructed of wood and in a substantial manner, if approved by the Inspector of Buildings may be erected on the rear of buildings within the fire limits.

Sect. 99. Piazzas and Balconies

Piazzas or balconies of wood on buildings other than frame buildings which do not exceed eight feet in width and which do not extend more than three stories in height may be erected. In connected houses such piazzas or balconies may be built provided the same are open on the front and have brick ends not less than eight inches thick continued from division or party walls and carried up above the roof of such piazza or balcony, and coped with incombustible material.

Frame buildings already erected and not exceeding
ee stories in height may have placed on any story

piazzas, balconies or bay windows of wood. The roofs of all piazzas, balconies or bay windows shall be covered with some fireproof material.

Sect. 100. Alteration of Roofs

The roof of an existing wood frame building within the fire limits one, or one and one-half stories in height may be changed from pitch to flat thus making a two story building; or the roof of a two, or a two and one-half story building may be changed from pitch to flat thus making a three story building provided that all other laws and ordinances are complied with and the entire outer walls of the building are covered with galvanized iron or other incombustible material equally durable. This shall apply in like manner to the ells of buildings.

Sect. 101. Cornices

On all buildings hereafter erected within the fire limits the exterior cornices inclusive of those on store fronts shall be of incombustible material throughout, and all exterior wooden cornices that may hereafter be damaged by fire or otherwise, if replaced shall be constructed of incombustible material. All metal parts of cornices shall be riveted, not soldered together. All cornices shall be fire stopped at party walls.

Sect. 102. Party Wall Within Fire Limits

No party wall within the fire limits shall be less than twelve inches thick.

TITLE IV

MATERIALS

Sect. 103. Quality

All materials shall be of a quality suitable for the purpose for which they are intended to be used, and conform to trade and manufacturers' standards. Each material must be free from imperfections whereby its strength or durability may be seriously impaired.

The Inspector of Buildings shall have the authority to reject materials which are unsuitable and below the usual standards, and may require tests to be made by the architect, engineer, builder, or owner to determine the strength of any structural materials.

Sect. 104. Brick

Brick shall be well burned and hard. When old bricks are used they shall be thoroughly cleaned. When the season will permit, bricks shall be wet before using.

No soft bricks shall be used in any part of a building exposed to the weather, or in any internal or external piers, nor in any part of a wall where there is a greater height than forty feet of wall above said brick. The bond of brick work shall be formed by laying one course of headers in every seven courses. All stone and brick work over openings exceeding four feet in width shall be supported with stone or iron lintels of sufficient strength to carry the superimposed weights, excepting where such stone or brick work shall be supported with substantial stone or ·ick arches. All lintels supporting stone or brick work must bear on stone, brick, or iron of sufficient strength.

Sect. 105. Stone

Stone shall be sound and hard and of sufficient dimensions for its intended use

Sect. 106. Sand

Sand used for mortar shall be clean, sharp grit sand, free from loam, dirt, or organic matter.

Sect. 107. Lime

Lime shall be thoroughly burned quicklime of good quality and well slaked before using.

Sect. 108. Cement.

Any natural cement which is a product of calcination of natural rock such as Akron, Louisville, and other hydraulic cements; slag Portlands will be classed as natural cement.

Sect. 109. Portland Cement.

The standard Portland cement of commerce, either domestic or foreign, which shall be capable of passing the requirements as set forth in the "Standard Specifications for Portland Cement," by the American Society for Testing Materials. The medium requirements for tensile strength for briquettes one inch square in section shall be those shown in the following table and there shall be no retrogradation in strength between the periods specified.

Neat Cement	Strength
24 hours in moist air	200 lbs.
7 days (1 day in moist air, 6 days in water)	550 lbs.
28 days (1 day in moist air, 27 days in water)	650 lbs.

For fireproofing and floor construction the highest grade of Portland shall be used. It shall be of uniform consistency and of such fineness that not more than ten per cent, will be rejected by a sieve of twenty-five hundred meshes per square inch, and, in addition to the above amounts, it shall be capable of sustaining without rupture a tensile strain of at least six hundred pounds per square inch after one day in the air and twenty-seven days in water, and be subject to such other physical and chemical tests as the Inspector of Buildings may require.

Sect. 110. Lime Mortar

A properly proportioned mixture of lime and sand, not more than three parts sand to one part unslaked lime.

Sect. 111. Lime and Cement Mortar

A properly proportioned mixture of cement and sand with lime putty added, not more than four parts sand to one part each of dry cement and slaked lime.

Sect. 112. Cement Mortar

A properly proportioned mixture of cement and sand, not more than four parts sand to one of Portland cement, nor more than three parts sand to one of Rosendale cement. The medium requirements for tensile strength for briquettes one inch square shall be those shown in the following table:

1 Part Cement, 3 Parts Standard Sand	Strength
7 days (1 day in moist air, 6 days in water)	175 lbs.
28 days (1 day in moist air, 27 days in water)	300 lbs

Sect. 113. Mortar for Plastering

Mortar for plastering shall be made as follows: The lime shall be slaked, made into putty, and cooled before putting in the hair which must be well separated. One bushel of hair will be required for every three barrels of putty; one and one-half barrels of sand to one barrel of putty may be mixed for the first or scratch coat, after being thoroughly mixed as above. The said mixture must be slaked for at least three days before using. The said mortar shall be used on lath surfaces with a second coat of mortar in which two and one-half barrels of sand to one barrel of putty, and less hair may be used.

Sect. 114. Concrete

When the structural use of concrete is proposed, a specification stating the quality and proportion of materials and the methods of mixing the same shall be submitted to the Inspector of Buildings.

Concrete for foundations shall be made of at least one part cement to three parts of sand and five parts of clean, broken stone, free from dirt and dust, of such size as to pass in any way through a two inch ring, or good clean gravel may be used in the same proportion as broken stone.

The ingredients of concrete shall be thoroughly mixed to the desired consistency and the mixing shall continue until the cement is evenly distributed and the mass is uniform in color and is homogeneous. Methods of measurement of proportions of the various ingredients, including water, shall be used which shall secure separate uniform measurment at all times.

Where the conditions may permit, a machine mixer of a type which insures a proper mixing of the materials throughout the mass, shall be used.

When it is necessary to mix by hand the mixing shall be on a water tight platform and a special precaution must be taken to turn the materials until they are homogeneous in appearance and color.

The materials must be mixed wet enough to produce a concrete of such a consistency as will flow into the forms and about the metal reinforcement, and which on the other hand can be conveyed from the mixer to the forms without separation of the coarse aggregate from the mortar.

Sect. 115. Timber

All timbers and wood shall be of good, sound material, free from rot, large, or loose knots, shakes, or any imperfections whereby the strength may be impaired, and be of such size and dimensions as the purposes for which the building is intended require.

Sect. 116. Iron and Steel

All structural wrought or cast iron, or steel, in quality, requirements of tests, workmanship, and in assemblage and inter-connection of shapes shall be in accordance with the standard specifications of the American Society for Testing Materials as well as those given in the handbook of the respective standard manufacturers; provided, that for the buildings of skeleton frame fireproof construction, the Inspector of Buildings may, at any time, require the owner to engage recognized experts to supervise the mill, shop, and field work, and who shall file certified copies of their reports on the progress of the work for the approval of the Inspector of Buildings, and no work shall be concealed or built upon until the Inspector has been furnished satisfactory proof that it is up to the accepted standards.

All wrought iron shall be uniform in character, fibrous, tough, and ductile. It shall have an ultimate tensile resistance of not less than forty-eight thousand pounds per square inch, an elastic limit of not less than twenty-four thousand pounds per square inch, an elongation of twenty per cent, in eight inches, when tested in small specimens.

Wrought iron shall be tested full size as rolled, where called for by the Inspector of Buildings. Specimens not more than one inch in thickness should bend double, cold, without showing cracks or flaws.

All structural steel shall have an ultimate tensile strength of from fifty-four thousand to sixty-four thousand pounds per square inch. Its elastic limit shall be not less than thirty-two thousand pounds per square inch, and test specimens, ruptured in tension, must show a minimum elongation of not less than twenty per cent, in from fifty thousand to fifty-eight thousand pounds per square inch.

Cast steel ingredients shall be made of open hearth steel containing one-quarter to one-half per cent of carbon, not over eight one-hundredths of one per cent phosphorous, and shall be practically free from blow holes.

Cast iron shall be of good foundry mixture, producing clean, tough, gray iron.

The quality of the iron going into castings under specifications shall be determined by means of the "Arbitration Bar." This is a bar one and one-quarter inches in diameter and fifteen inches long. Two sets of two bars shall be cast from each heat, one set from the first and the other set from the last iron going into the castings. Where the heat exceeds twenty tons an additional set of two bars shall be cast for each twenty tons or fraction thereof above this amount. In case of a change of mixture during the heat, one set of two bars shall be cast for every mixture other than the regular one. Each set of two bars is to go into a single mold. The bars shall not be rumbled or otherwise treated, being simply brushed off before testing.

The transverse test shall be made on all the bars cast, with supports twelve inches apart, load applied at the middle, and the deflection at rupture noted. One bar of every two of each set made must fulfill the requirements to permit the acceptance of the castings represented.

The bottom of the bar is one-sixteenth of an inch smaller in diameter than the top, to allow for draft and for the strain of pouring. The pattern shall not be rapped before withdrawing. The flask is to be rammed up with green molding-sand, a little damper than usual, well mixed and put through a number eight sieve, with a mixture of one to twelve bituminous facing. The mold shall be rammed evenly and fairly hard, thoroughly dried and not cast until it is cold. The test-bar shall not be removed from the mold until cold enough to be handled.

Sect. 117. Tests of Structural Materials

All structural materials of whatever nature shall be subjected to tests to determine its character and quality by methods established by the authorities prescribed in the section immediately following this section; the tests shall be made under the supervision of the Inspector of Buildings or he may direct the owner to file with him a certified copy of the results of such tests as he may direct shall be made. No new structural material shall be used in any structure until it has been tested and found to fulfill the minimum conditions and tests required by this Code for materials used for like purposes.

Sect. 118. Stresses in Materials—How Calculated

The stresses used in materials hereafter to be used in construction shall be the calculated stresses due to their "dead load." The allowable factors or units of safety or the dimensions of each piece or combination of materials required in a building or structure, if not given, in this Code, shall be ascertained by computation according to the rules prescribed by the standard modern authorities on strength of materials, applied mechanics and engineering practice, provided, that the Inspector of Buildings may, and in cases of trussed or reinforced concrete buildings two or more stories high, shall require the owner or architect or engineer to submit a certified copy of such computation or strain sheets for examination and approval with the application for the building permit.

TITLE V

FACTORS OF SAFETY

Sect. 119. Factors Increased for Vibrating Loads

In computing the working stresses in the framing of any building, unless the safe loads are prescribed in this Code, the following factors of safety shall be used. These factors shall be increased where there is a vibrating load.

For wrought iron or steel subject to compression or tension or transverse strains . . .	4
For cast iron subject to tension or transverse strains	10
For cast iron subject to compression for plates and columns of ordinary or short length—according to the uniformity of the thickness of shell	6 to 8
For cast iron columns—according to the uniformity of the thickness of shell	8 to 10
For timber subject to tension and transverse strain	6
For timber compressions in short columns or posts	4
For timber in long columns or posts	5
Natural or artificial stone or masonry, or concrete	10
For framed structures composed of two or more pieces of the same material, or a combination of two or more pieces of different materials, such as frames of all kinds, brackets, cantilevers, trusses, and arched	

floors or trussed, reinforced or armored concrete floors combined with metal girders, beams or channels, under ordinary loading of buildings	4
For framed structures as above, exposed to vibrations of machinery, or trucking, or shocks, or exposed to the action of the elements	5
For floors of arch construction of brick, concrete, or tile, or similar bearing parts between beams	7
For floors of reinforced or armored concrete construction or similar bearing parts between beams	5
For iron or steel in latticed or open worked columns or latticed beams or girders, when solidly filled or encased in concrete, extending at least two inches beyond the outer edges or faces of the structural members (with no allowance for the concrete)	3

Sect. 120. Temporary Supports

Every temporary support placed under any structure, wall, girder, or beam, during the erection, finishing, alteration, or repairing of any buidling or structure or any part thereof, shall be of sufficient strength to safely carry the load to be placed thereon, allowing a factor of safety of not less than five.

Sect. 121. Loads on Floors and Roofs During Construction

During the construction or alteration of any building or structure, no material entering into such construction or alteration shall be placed on any floor or roof of any greater weight than the live load that each such floor or roof is intended to safely sustain when the building or structure is completed.

TITLE VI

CALCULATION OF STRESSES

Sect. 122. Safe Sustaining Power of Soils

Sound, natural earth shall not be loaded to more than the following in tons per square foot:

Gravel and coarse sand, well compacted or hard pan	6 tons
Hard rock	20 tons
Fairly hard rock	6 tons
Dry, hard clay or fine sand	4 tons
Moderately dry clay or moderately compact sand	2 tons
Soft sand or clay or undisturbed alluvial soils	1 ton

No foundation shall be started on filled ground until proper tests have been made and permit granted by the Inspector of Buildings. When a doubt arises as to the safe sustaining power of the earth upon which a building is to be erected, the Inspector may order borings to be made, or direct the sustaining power of the soil to be tested by and at the expense of the owner of the proposed building.

Sect. 123. Allowable safe load in ton per square foot.

Laid in Mortar	Lime	Lime Portland Cement	Hydraulic Cement	Portland
Common Kiln Run . . .	6	8	10	13
Common Selected Hard	6	10	12	16
Hard Pressed Hydraulic or Vitrified Shale or Paving	6	12	14	18
Stone Rubble, irregular, bonded	4	5	7	10
Stone Rubble, coursed, well bonded	6	7	9	11
Stone Ashlar or block with full beds . . .	6	12	15	20
Concrete: Cement, 1; Sand, 2; Stone, 4			8	16
Concrete: Cement, 1; Sand, 2; Stone, 5			6	14

Sect. 124. Terra Cotta Blocks

Terra Cotta building blocks built in a wall facing may be loaded seven tons per square foot of effective section, if unfilled, and ten tons per square foot, measured on the beds, when filled solid with brickwork or concrete.

Sect. 125. Brick Inner Facing

When hard, hollow bricks are used as the inner facing of a hard selected brick wall, the wall shall be estimated as if laid up in kiln run brick. Where the hollow tile blocks are used for building partitions or as inclosing walls, the joints shall be well filled with mortar, and the effective bearing parts of the tiles shall not be loaded more than one hundred and fifty pounds to the square inch for hard fire clay tiles, nor more than one hundred pounds per square inch for hard ordinary clay tiles, nor more than seventy-five pounds per square inch for porous tiles. Portland building blocks used for outside walls and partitions shall not be loaded to more than one hundred and fifty pounds per square inch of available or effective section.

Sect. 126. Hollow Tile Blocks—Used When

Hollow tile blocks may be used for residences and light construction not over two and one-half stories in height. The blocks shall be twelve inches thick for the first story and eight inches thick for the second story and shall be laid in mortar composed of one part Portland cement, two and one-half parts sand, and not more than one-tenth part of lime putty, the said blocks must be well burnt, hard and dense.

Where joists rest upon walls of hollow tile blocks, the bearing surface shall be made solid with Portland cement concrete or brick laid in Portland cement mortar.

Sect. 127. Girders and Joists Resting on Walls

Wherever girders or joists rest upon walls so that there is a concentrated load on the block of over one ton, the blocks supporting the girders or joists must be made solid by filling with Portland cement concrete. Where such concentrated loads shall exceed three tons, the blocks for two courses below and for a nce extending at least eighteen inches each side of such girder, shall be made solid. Where the load on the wall exceeds five tons, the blocks for three courses beneath it shall be made solid with similar material. Wherever walls are decreased in thickness the top courses of the thicker wall must be made solid in the same manner.

Provided always, that no dense hollow blocks shall be loaded to an excess of three hundred pounds per square inch of net section in compression or if ordinary semi-porous blocks are used, they shall not be loaded to exceed two hundred pounds per square inch of net section.

All piers or buttresses that support loads in excess of five tons, shall be filled solid with Portland cement concrete. Lintels spanning over four feet six inches in the clear shall rest on blocks filled solid with concrete.

All hollow blocks shall be subject to the regular inspection provided for by this Code for other masonry building material. The ultimate crushing strength shall be at least ten times the load they are required to support.

Sect. 128. Stress in Columns

In columns or compression members with flat ends of cast iron, steel, wrought iron, or wood, the stress per square inch shall not exceed that given in the following tables:

When the length divided by least radius of gyration equals	Working stresses per sq. in. of Section		
	Cast Iron	Steel	Wrought Iron
120	. . .	8,240	4,400
110	. . .	8,820	5,200
100	. . .	9,400	6,000
90	. . .	9,980	6,800
80	. . .	10,560	7,600
70	9,200	11,104	8,400
60	9,500	11,720	9,200
50	9,800	12,300	10,000
40	10,100	12,880	10,800
30	10,400	13,460	11,600
20	10,700	14,040	12,400
10	11,000	14,620	13,200

And in like proportion for intermediate ratios.

When the length divided by the least diameter equals	Working stresses per sq. in. of Section		
	Long Leaf Yellow Pine	White Pine Norway Pine Spruce	Oak
30	460	350	390
25	550	425	475
20	640	500	560
15	730	575	645
12	784	620	696
10	820	650	730

And in like proportion for intermediate ratios.

Five-eighths the value given for white pines shall also apply to chestnut and hemlock posts.

For locust posts use one and one-half the values given for white pine.

Sect. 129. Carrying Capacity

The safe carrying capacity of the various materials struction (except in the case of columns) shall be determined by the following working stresses in pounds per square inch of section area.

COMPRESSION (Direct)

Rolled Steel	16,000
Cast Steel	16,000
Wrought Iron	12,000
Cast Iron (in short blocks)	16,000
Steel Rivets (bearing)	20,000
Steel Pins	15,000
Wrought Iron Rivets (bearing)	15,000
Wrought Iron Pins	12,000

	With Grain	Across Grain
Oak	900	800
Yellow Pine	1,000	600
White Pine	800	400
Spruce	800	400
Locust	1,200	1,000
Hemlock	500	500
Chestnut	500	1,000

Concrete (Portland) Cement, 1; sand, 2; stone, 4	450
Concrete (Portland) Cement 1; sand, 2½; stone, 5	400
Concrete, Rosendale, or equal, cement, 1; sand, 2; stone, 5	200
Rubble stonework in Portland cement mortar	140
Rubble stonework in Rosendale cement mortar	111
Rubble stonework in lime and cement mortar	97
Brickwork in Portland cement mortar; cement, 1; sand, 3	250

Brickwork in Rosendale, or equal, cement mortar; cement, 1; sand, 3	208
Brickwork in lime and cement mortar; cement, 1; lime, 1; sand, 6	160
Brickwork in lime mortar; lime, 1; sand, 4	111

Granites (according to test)	1,000 to 2,400
Gneiss stone	1,200
Limestones (according to test)	700 to 2,300
Marbles (according to test)	600 to 1,200
Sandstones (according to test)	400 to 1,600
Bluestone	2,000
Brick (hard burned, flatwise)	300
Slate	1,000

TENSION (Direct)

Soft steel	14,000
Medium steel	16,000
Wrought iron	12,000
Cast iron	3,000
Yellow pine	1,200
White pine	800
Spruce	800
Oak	1,000
Hemlock	600

SHEAR

Steel shop rivets and pins	10,000
Steel web plates	9,000
Steel field rivets	8,000
Steel field bolts	7,000
Wrought iron web plates	6,000
Wrought iron shop rivets and pins	7,500
Wrought iron field rivets	6,000

. . . 5,500
. . . 3,000
. . . 75

With Fibre	Across Fibre
70	500
40	250
50	320
100	600
100	720
40	275
. .	150

ending)

. . . 16,000
. . . 20,000
) . . 14,000
. . . 12,000
. . . 15,000
e sec-
. . . 12,000
. . . 14,000
. . . 3,000
. . . 1,200
. . . 800
. . . 800
. . . 1,000
. . . 1,200
. . . 600
. . . 800
. . . 180
. . . 150
. . . 150
. . . 400

Marble	120
Sandstone	100
Bluestone	300
Concrete (Portland) cement, 1; sand, 2; stone, 4	600

Sect. 130. Live Loads Allowed

The minimum "live loads," uniformly distributed, in pounds per square foot to be imposed on floors in buildings as follows:

Public Buildings proper	100
Detention Buildings:	
In cells or wards	60
In the public corridors, halls, stairways, offices, chapel, clinical assembly or court rooms	90
School Buildings:	
In class rooms	70
In the corridors, halls, stairways, laboratories and assembly rooms	90
Assembly Halls—Theatres:	
In auditoriums with fixed seats	90
In lobbies, passageways, corridors, stairways, and in auditoriums with movable seats	100
In any hall used for dancing	150
Hotels:	
In private rooms and apartments	50
In halls, corridors, passageways, stairways, offices, lobbies, dining rooms, cafes and rooms for public use	90
Office Buildings:	
In offices proper	60
all hallways, lobbies, stairs, and rooms the common use of tenants	100

Store Buildings (for light merchandise):	
Ground floor	125
Balance of building	100
For heavy merchandise, at least	200
Warehouse—Factory—Workshop:	
When the nature of their occupancy is general, the loads will be the same as for store buildings, except in cases where the buildings are used for the sale, storage or manufacture of very light, or of heavy merchandise or machinery, when they shall be proportioned to the loads they carry.	
Apartment Houses—Clubhouses:	
Same as for Hotels.	
Tenement Houses:	
In private rooms and apartments	50
In public halls, corridors and stairs	80
Miscellaneous:	
For floors of miscellaneous buildings and for floors not included or loaded more heavily than in the above classification and for floors subject to vibration from machinery, or that of drill rooms, riding schools, etc., or those supporting moving loads, the Inspector shall determine the imposed loads by calculation.	
Roofs on all buildings	50
Attic floors when not used for storage	20
When used for limited habitation or storage, never less than three-quarters of the average load assigned to the floor below.	
Stairs and fire escapes, generally, unless otherwise provided	80
Sidewalks, vaults and coverings over sidewalk lifts and coal holes	300

The Inspector of Buildings may prescribe the maximum loads which may be imposed upon the floors of existing buildings and those hereafter erected.

Sect. 131. Loads on Floors and Arches

All wooden flooring between two joists or supports or any floor arch of brick, tile, or concrete, or any reinforced or armored concrete or iron plate, or floor lintel, or other filling between two supporting joists, beams or girders, shall be proportioned to carry not less than ten per cent more live load than assumed for the joists, beams, or rafters, as provided in the next section.

Sect. 132. Loads on Joists and Beams

All beams, joists and rafters or girders carrying the flooring or floor arches directly between them, as provided in the previous section, shall be proportioned to carry all of their "dead load" and the whole of the imposed uniformly distributed "live load;" provided that no joist, beam or rafter shall exceed twenty times its depth in length. If the roof is pitched at an angle not exceeding forty-five degrees, and having determined the minimum distance between center of support for a rafter horizontally as a base, the length may be increased to meet the hyothenuse formed by the pitch line, without increasing the other dimensions.

Sect. 133. Loads on Girders and Trusses

All girders and trusses shall be proportioned to the whole of the "dead load" and the following proportional parts of the floor loads transmitted by the joists, beams, purlins, or rafters:

	Per Cent
Beams and girders at the foot of each stair run	66
In the roofs and attic floors of all buildings	100
In the balance of the floors in buildings not exceeding three stories in height	100
In buildings over three stories high, designed to carry a floor load of	
150 pounds and upwards	97½
100 pounds to 150 pounds	95
80 pounds to 100 pounds	90
60 pounds to 80 pounds	85
40 pounds to 60 pounds	80

Provided that no metal girder or truss in the external, or any bearing wall in the building shall exceed thirty feet between centers of supports.

Sect. 134. Loads on Columns, Piers and Walls

Each column, pier, post, and wall shall be proportioned to carry all of the "dead load," and the following proportional parts of the "live load" transmitted to them by the beams, girders, or trusses:

	Per Cent
In the attics of all buildings and in all building not exceeding three stories in height and in all frame buildings	100
In buildings of all other classes designed to carry the following floor loads:	
150 pounds and upwards	95
100 to 150 pounds	90
80 to 100 pounds	85
60 to 80 pounds	80
40 to 60 pounds	75

Sect. 135. Length of Columns, Piers and Posts

No free standing or built in column, pier, or post shall exceed the following proportions of the least side or diameter to the height without being anchored, stayed, or tied by beams or girders in at least two directions at right angles to each other:

Brick piers	1 : 8
Block stone piers	1 : 10
Wooden posts	1 : 16
Cast iron columns	1 : 20
Wrought iron columns	1 : 40
Steel columns	1 : 44

Sect. 136. Size of Columns, Posts and Piers

When used as principal supports for walls or floor construction, brick or stone piers shall not be less than twelve inches by twelve inches; cast iron columns not less than five inches in their least diameter or width, and no shell shall be less than one-twelfth of the diameter or side, but never less than three-quarters of an inch thick; wrought iron or steel built-up columns not less than six inches in their least diameter or side, with not less than one-quarter inch metal in any of their parts.

Sect. 137. Loads on Foundations

The footings of all buildings shall be proportioned to sustain all the accumulated "dead load" and the following proportions of the "live load" transmitted to them as follows:

If through walls or columns built in or anchored to walls for a floor load of

Sect. 139. Protection of Adjoining Building

Whenever any excavation is made on land adjoining a building, the owner of the land upon which such excavation is made shall shore up, protect and take every precautionary measure to protect and save from injury or harm any footing, foundations, walls or parts thereof, or any part of the building; which is liable to occur by reason of such excavations, provided the depth of such excavations exceeds nine feet below grade. If such excavation does not exceed nine feet, then any such expense shall be borne by the owner of such building.

Sect. 140. Plans to Show Character of Soil

Plans filed with the Inspector af Buildings shall be accompanied by a statement of the character of the soil at the level of the footing.

Sect. 141. Traffic Uninterrupted

When buildings to be erected or altered front on business thoroughfares and in congested business districts, the Inspector of Buildings shall require that sidewalk traffic be maintained without interruption by means of elevated or covered sidewalks.

TITLE VIII

FOUNDATIONS AND FOOTINGS

Sect. 142. Construction

Every building except buildings erected on solid
k, shall have foundations of brick, stone, steel,

iron, or Portland cement concrete, laid not less than four feet below the surface of the earth, on solid ground, on level surface of rock, or upon piles or ranging timbers when solid earth or rock is not found. Piles intended to sustain a wall, pier or post shall be spaced not more than thirty-six nor less than twenty-five inches on centers, and they shall be driven to a solid bearing, if practicable to do so, and the number of such piles shall be sufficient to support the superstructure proposed.

Sect. 143. Dimension of Piles

No pipe shall be used of less dimensions than five inches at the small end and ten inches at the butt for piles of twenty feet or less in length, and twelve inches at the butt for piles more than twenty feet in length. No pile shall be weighted with a load exceeding thirty thousand pounds.

Sect. 144. Sustaining Power of Piles

When a pile is not driven to refusal, its safe sustaining power shall be determined by the following formula: Twice the weight of the hammer in tons multiplied by the height of the fall in feet divided by least penetration of pile under the last blow in inches plus one. The Inspector of Buildings shall be notified of the time when test piles shall be driven. The tops of all piles shall be cut off below the lowest water line. When required, concrete shall be rammed down in the interspaces between the heads of the piles to a depth and thickness of not less than twelve inches and for one foot in width outside of the piles.

Sect. 145. Capping Timbers

Where ranging and capping timbers are laid on piles for foundations, they shall be of hard wood not less than six inches thick and properly joined together, and their tops laid below the lowest water line.

Sect. 146. Metal in Foundations

Where metal is incorporated in or forms part of a foundation, it shall be thoroughly protected from any rust by paint, asphaltum, concrete, or by such materials and in such manner as may be approved by the Inspector of Buildings. When footings of iron or steel for columns are placed below the water level, they shall be similarly coated, or inclosed in concrete, for preservation against rust.

Sect. 147. Loads on Caissons

When foundations are carried down through earth by piers of stone, brick, or concrete in caissons, the loads on the same shall not be more than fifteen tons to the square foot, when carried down to the rock; ten tons to the square foot when carried down to firm gravel or hard clay; eight tons to the square foot in open caissons or sheet pile trenches when carried down to rock.

Sect. 148. Materials Used

Foundation walls shall be built of stone or brick, with cement mortar, or of Portland cement concrete, except foundations for frame buildings and private stables, and for buildings not more than two stories in height, which may be built with lime and cement mortar. If built of Portland cement concrete they shall be at least four inches thicker than the wall next above them in a depth of twelve feet below the curb level, and for every additional ten feet or part thereof deeper, they shall be increased six inches in thickness. The footing or base course shall be of stone or concrete, or both, or of concrete and stepped up brick work of sufficient thickness and area safely to bear the weight to be imposed thereon.

Foundation walls of wood frame buildings may be built with good ledge stone laid dry and thoroughly pointed on the inside with lime and cement mortar when such method is approved by the Inspector of Buildings. All Field and "Cobble" stone must be laid in mortar.

Sect. 149. Concrete Footings

If the footings or base course be of concrete, the concrete shall not be less than twelve inches thick. If of stone, the stone shall not be less than sixteen by twenty-four inches, and at least six inches in thickness for walls, and not less than eight inches in thickness for piers, columns or posts. The footing or base course, except under framed buildings, whether formed of concrete or stone, shall be at least eight inches wider than the bottom width of walls, and at least six inches wider on all sides than the bottom width of the said piers, columns or posts. If the superimposed load is such as to cause undue transverse strain on a footing projecting six inches, the thickness of such footing shall be increased so as to carry the load with safety, by adding extra course or courses to above dimensions. All base stones shall be well bedded and laid crosswise, edge to edge.

If stepped up footings of brick are used in place of stone above the concrete the offsets, if laid in single courses shall not exceed one and one-half inches or if laid in double courses, then each shall not exceed three inches, offsetting the first course of brick work, back one-half the thickness of the concrete base, so as properly to distribute the load to be imposed thereon.

Sect. 150. Isolated Piers as Supports

If, in place of a continuous foundation wall, isolated piers are to be built to support the superstructure, where the nature of the ground and character of the building make it necessary, in the opinion of the Inspector of Buildings, inverted arches resting on a proper bed of concrete, both designed to transmit with safety the superimposed load, shall be placed between the piers. The thrust of the outer piers shall be taken up by suitable wrought iron or steel rods and plates.

Sect. 151. Grillage Beams

Grillage beams of wrought iron or steel resting on a proper concrete bed may be used. Such beams must be provided with separators and bolts, inclosed and filled solid between with concrete, and of such size and so arranged as to transmit with safety the superimposed load.

Sect. 152. Headers in Stone Walls

All stone walls twenty-four inches and not less than eighteen inches in thickness, shall have at least one header extending through the wall in every three feet in height from the bottom of the wall, and in every three feet in length, and if over twenty-four inches in thickness, shall have one header for every six superficial feet on both sides of the wall, laid across each other to bond together, and running into the wall at least twenty inches. All headers shall be at least twelve inches in width, and six inches in thickness, and consist of good flat stones.

No stone shall be laid in such walls in any other position than on its natural bed. No stone shall be used that does not bond or extend into the wall at least six inches. Stones shall be firmly bedded in cement mortar and all spaces and joints thoroughly filled.

Sect. 153. Thickness of External Retaining Walls

External retaining walls shall be constructed of sufficient thickness safely to support the outside pressure when earth embankments are adjacent to any foundation or curb wall.

Sect. 154. Sewer Connections Before Foundations Laid

In all cases a connection with the street sewer where the same exists, shall be established before beginning the work of laying foundations. Before the walls of buildings are carried up above the foundation walls, the cellars shall be connected through drain tiles and catch basins with the street sewer. Should there be no sewer in the street, or if the cellars are below the sewer or ground water level, then provisions shall be made to prevent water accumu-

	Basement			Stories							
Stories	Stone	Brick	Concrete	1	2	3	4	5	6	7	8
1	18	16	14	12							
2	18	16	14	12	8						
3	20	16	16	12	8	8					
4	24	20	18	16	12	12	12				
5	24	20	18	16	16	12	12	12			
6	28	24	20	16	16	16	12	12	12		
7	28	24	20	20	16	16	16	12	12	12	
8	28	24	24	20	16	16	16	16	12	12	12

NOTE.—But no party wall shall be less than twelve inches thick.

Sect. 157. Eight Inch Brick Walls—When Allowed

For separate private dwellings or private stables eight inch walls may be used for one story, providing no wall is more than thirty feet long, without a break or buttress, and not over eleven feet high, and not span more than eighteen feet. Eight inch brick walls may be used for small stores, walls of which are not more than thirty feet long without break or buttress, nor more than eleven feet high, nor for spans of more than eighteen feet. All eight inch brick walls must be built with Portland cement mortar.

Sect. 158. Brick Walls Under Frame Construction

Where two stories of frame construction are erected over one story of brick construction, the brick walls shall not be less than twelve inches thick.

Sect. 159. Walls of Buildings Other Than Wood

The walls of all buildings, other than frame or wood buildings, shall be constructed of stone, brick, hollow tile, Portland cement concrete, iron or steel, or, if approved by the Inspector of Buildings, other hard, incombustible material, and the several component parts of such buildings shall be as herein provided.

Sect. 160. Buildings Inclosed

All buildings shall be inclosed on all sides with independent or party walls.

Sect. 161. Walls and Piers to be Bonded

The walls and piers of all buildings shall be properly and solidly bonded together with close joints filled with mortar. They shall be built to a line and be carried up plumb and straight.

Sect. 162. Thickness Maintained

The walls of each story shall be built up the full thickness to the top of the beams above.

Sect. 163. Mason Work in Freezing Weather

Walls or piers, or parts of walls and piers, shall not be built in freezing weather, unless the brick and mortar be heated.

Sect. 164. Thickness of Walls Increased

When walls are more than twenty-five feet apart, four inches shall be added for every succeeding interval of ten feet or part thereof of increase of distance between them without intermediate division walls or rows of column and girder supports.

Sect. 165. Thickness Increased for Reduction of Area

When any horizontal section of wall shows more than twenty-five per cent reduction of area on account of flues, openings and recesses, four inches shall be added for every succeeding interval of ten per cent or part thereof, of reduction, provided that in walls of uniform thicknesses, such reduction does not exceed fifty-five per cent of the whole, or in masonry pier construction, not more than seventy per cent for each bay.

Sect. 166. Thickness Increased for Heavy Floor Loads

When the floors of a building of an established height are to be loaded heavier than the maximum given in the tables of permissible loads, the thickness of walls shall be proportionately increased.

Sect. 167. Thickness Increased for Additional Length

All buildings over one hundred feet in depth, without a crosswall or proper piers or buttresses, shall have the side or bearing walls increased in thickness four inches more than is specified in the respective sections of this Code, for the thickness of walls for every one hundred feet, or part thereof, that the said buildings are over one hundred feet in depth.

Sect. 168. Walls Corbeled

All party or division walls of a less thickness than twelve inches shall be corbeled not less than three inches on sides to receive the floor joists, or instead of corbeling, approved malleable iron or steel joist hangers may be used.

Sect. 169. Additional Stress

Where it appears that extra or additional stress shall come upon any wall or pier, extra provisions shall be made for carrying the same by additional thickness of walls or additional size of pier, or the addition of proper pilasters.

Sect. 170. Inside Portion of Walls

The inside four inches of any wall may be built of hard-burnt hollow brick properly tied and bonded by means of full header courses every seventh course into the walls, and of the dimension of the ordinary bricks.

Sect. 171. Linings Not Part of Thickness

While hollow tile or porous terra cotta blocks are used as lining or furring for walls, they shall not be included in the measurement of the thickness of such walls.

Sect. 172. Hollow Walls

In all walls that are built hollow the same quantity of stone, brick or concrete shall be used in their construction as if they were built solid as in this Code provided, and no hollow wall shall be built unless the parts of same are connected by proper ties, either of brick, stone or iron placed not over twenty-four inches apart.

Sect. 173. Recesses in Walls

No recess or chase for water, soil, steam, or other pipes shall be made in any exterior or in any other bearing wall to more than one-third of its effective thickness, and the recesses around said pipe or pipes shall be filled with solid masonry, or plastic incombustible material, after the pipes are in place, for the space of one foot at the top and bottom of each story. No recesses shall be made in any exterior or other bearing wall less than twelve inches thick, and no continuous vertical recess other than flues in stacks shall be nearer than five feet to any other recess.

Sect. 174. Channeling in Walls

No channeling shall be done in walls which are less than twelve inches thick except for small gas pipes and wire conduits. Recesses for stairways or elevators may be left in the foundaion or cellar walls of all buildings, but in no case shall the walls be of less thickness than the walls of the third story, unless reinforced by additional piers with iron or steel girders or iron and steel columns and girders, securely anchored to walls on each side..

Sect. 175. Wind Pressure

All structures exposed to wind shall be designed to resist a horizontal wind pressure of thirty pounds for every square foot of surface thus exposed, from the ground to top of same, including the roof, in any direction. In no case shall the overturning moment due to wind pressure exceed seventy-five per cent of the moment of stability of the structure. In all structures exposed to wind, if the resisting moments of the ordinary materials of construction, such as masonry, partitions, floors, and connections are not sufficient to resist the moment of distortion due to wind pressure, taken in any direction on any part of the structure, additional bracing shall be introduced to make up the difference in the moments.

In calculations for wind bracing, the working stresses set forth in this Code may be increased by fifty per cent. In buildings under one hundred feet in height, provided the height does not exceed four times the average width of the base, the wind pressure may be disregarded.

Sect. 176. Supports of Walls

It shall be unlawful to erect, construct, or build any rear, front, party, division or partition masonry wall upon wooden girders, rafters, or lintels, or to support any such wall by any wooden support whatever; but all such supports shall be of iron, brick or stone, and shall rest on sufficient stone or metal bearing blocks.

Sect. 177. Openings to have Arches

Openings for doors and windows in all buildings shall have good and sufficient arches of stone, brick or terra cotta, well built and keyed with good and sufficient abutments; or lintels of stone, iron or steel of sufficient strength, which shall have a bearing at each end of not less than five inches on the wall.

Sect. 178. Strength of Arches

All masonry arches shall be capable of sustaining the weight and pressure which they are designed to carry, and the stress at any point shall not exceed the working stress for the material used, as given in this Code.

Sect. 179. Tie Rods

Tie rods shall be used where necessary to secure stability.

Sect. 180. Existing Party Walls—Used When

Walls heretofore built or used as party walls, whose thickness at the time of their erection was in accordance with the requirements of the then existing laws, but which are not in accordance with the requirements of this Code, may be used if in good condition, for the ordinary uses of fire walls, provided the height of the same be not increased.

Sect. 181. Existing Walls Increased in Height

In case it is desired to increase the height of the existing party or any other walls, which are less in thickness than required under this Code, the same shall be done by a lining of brickwork to form a combined thickness with the old wall of not less than four inches more than the thickness required for a new wall corresponding with the total height of the wall when so increased in height. The said lining shall be supported on proper foundations. No lining shall be less than eight inches in thickness and all linings shall be laid up in cement mortar and thoroughly anchored to the old brick walls with suitable wrought iron anchors placed two feet apart and properly fastened or driven into the walls in rows alternating vertically and horizontally with each other, the old walls being first cleaned of plaster or other coatings where any lining is to be built against the same.

Sect. 182. Lining in Basement.

All linings in basement shall project four inches beyond the lining in the first floor. Skeleton steel or iron construction may be used with posts and girders, supporting each story and carried up to the full height of the proposed building, resting on sufficient foundations as provided under Title VIII.

Sect. 183. Code Not to Affect Present Operations

Any building, the erection of which was commenced in accordance with specifications and plans submitted to and approved by the Inspector of Buildings prior to the passage of this Code, if properly constructed, and in safe condition, may be completed, or built upon in accordance with the requirements of law, as to the thickness of walls, in force at the time when such specifications and plans were approved.

Sect. 184. Walls Not to be Carried Up More Than One Story in Advance of Each Other

In no case shall any wall or walls of any building be carried up more than one story in advance of any other wall, except by permission of the Inspector of

Buildings. And this prohibition shall include the inclosure walls for skeleton buildings.

Sect. 185. Walls to be Bonded Together

The front, rear, side and party walls shall be properly bonded together or anchored to each other every six feet in their height by wrought iron anchors, not less than one and one-half inches by three-eighths of an inch in size and not less than twenty-eight inches in length.

Sect. 186. Exterior Piers Anchored

All exterior piers shall be anchored to the beams or girders on the level of each tier.

All exterior walls except of fireproof buildings, on lot line and division and party walls over fifteen feet high shall have parapet or coping walls carried at least eighteen inches above the roof, and shall be coped with incombustible material. The front and rear walls if facing on streets, alley, or open space may have the parapet wall omitted. Open balustrades shall not be placed above the cornice line of any building unless they are built of incombustible material directly over the wall below, nor shall the top rail of such balustrades be over five feet above the roof line. Parapet walls and party or division walls shall extend at least two feet above flat roofs.

Sect. 187. Walls Furred With Wood

In all walls furred with wood the brick work between the ends of the wood beams shall project the thickness of the furring beyond the inner face of the wall for the full depth of the beams, or the space between the furrings shall be filled flush with mortar for a space of five inches in width above and below the floor beams of each story.

Sect. 188. Height of Stories

The height of stories for all given thicknesses of walls shall not exceed:

First story	16 feet in the clear
Second story	14 feet in the clear
Third story	12 feet in the clear
Fourth story and upper stories	11 feet in the clear

And if any story exceeds the foregoing heights, the walls of any such story and all walls below that story shall be increased four inches in thickness.

Sect. 189. Facing of Walls

Stone, cement blocks or terra cotta facing shall be not less than four inches in thickness at any place, and shall be securely anchored to the brick backing at least every two feet vertically and horizontally. The facing wall shall not be counted as part of thickness of brick walls, unless the average thickness of facing is six inches or more, and the facing thoroughly bonded into the walls, in which case half the average thickness of facing shall be allowed in calculating thickness of wall in accordance with table.

Sect. 190. Curtain Walls—Thickness—Height

No curtain wall for steel frame buildings shall be less than twelve inches except that walls eight inches in thickness may be used between piers or steel supports not over twelve feet on centers and not over twelve feet high, for buildings of one or two stories n approved by the Inspector of Buildings.

Sect. 191. Dividing Walls in Apartment Houses

In all apartment houses the dividing walls or partitions between the apartments provided for each family, where not separated by a hall or staircase shall be made of incombustible material or semi-combustible stud partitions. In the absence of definite subdivisions between the apartments of different families, eight rooms shall be counted as the equivalent of one apartment. In all buildings not of fireproof construction there shall be for every eight rooms in any one story, dividing walls or partitions of incombustible material separating the rooms from the contiguous spaces.

Sect. 192. Dividing Walls in Double or Block Houses

In double houses or houses in block form the dividing walls shall be of brick or other incombustible material, extending from the cellar to one foot above the roof and two feet above flat roofs excepting in case of steep roofs of double houses, where division walls shall be carried to under side of roof boards. See also Sect. 198, "Dividing Partitions in Blocks of Frame Houses."

Sect. 193. Brick Walls Around Elevator Shafts

When brick walls surround stairways, elevator shafts, shaving pits, and light shafts, they shall not be less than eight inches thick, but no such eight-inch wall shall be built more than eighteen feet high without lateral support or anchorage, and the total height of any eight-inch brick wall shall not exceed fifty feet.

Sect. 194. Calculating Strength of Piers and Portions of Wall

In calculating the strength of isolated piers or divisions forming portions of walls, the least dimension shall be considered in determining the loads which such piers may carry. If outside walls are of pier construction the piers shall be graded in size according to weights to be carried, but not less than sixteen inches thick for upper story and shall increase four inches for each two stories below; they shall also be graded as to width of face according to span of bays.

Such piers shall have a width of twenty four inches for an eight foot bay measuring from center to center of pier and shall increase four inches in face width for each two feet or fraction thereof that the width of the bay is increased. Curtain or panels between piers shall be of brick and at least eight inches thick.

Sect. 195. Height of Isolated Brick Pier

No isolated brick pier shall be built whose height exceeds ten times its least dimensions and any such pier where receiving concentrated loads, shall have suitable bearing blocks of stone where piers are above the ground and exposed to the weather, and all other piers must have cast iron plates. Both stone and plate must be so proportioned as to properly distribute the load to come upon it.

All isolated piers shall be built of cut stone, Portland cement, concrete, or good, hard, well burnt brick.

Sect. 196. Piers Faced

In case piers are faced with pressed brick, they shall be so laid as to have proper bearings of mortar under each pressed brick, so that the strength of the pier may be fully maintained on all sides; the central part of the pier shall be laid in Portland cement.

Sect. 197. Brick in Piers

Brick piers shall be built of good, hard, well burnt brick of uniform size laid in cement or lime mortar, with uniform joints throughout facing and backing and of sufficient size to carry safely the load which they are intended to carry. Each course of brick shall be laid over the whole surface of the pier and each brick shall be thoroughly surrounded by mortar, and all shall be properly bonded, and the joints slushed full of mortar before the next course shall be laid. The top of the pier, when finished, shall be level for the cap stone, plate or other covering.

Sect. 198. Dividing Partitions in Blocks of Frame Houses

In blocks of frame houses, the dividing partitions between houses shall be built with five inch studs, filled in solid with four inches of brickwork laid in mortar; or of other incombustible material, carried to under side of roof boards. Such dividing partition shall rest on a brick, concrete or stone wall in cellar. Where it is impractical to build a partition with masonry filling, and at the discretion of the Inspector of Buildings a four inch stud partition filled in solid with mineral wool, held in position by blocks every three feet in height and plastered on both sides with hard plaster on metal lathing may be used for fire retarding dividing partition. In blocks of more than three houses every alternate division wall shall be constructed of solid brickwork in accordance with the tables of this Code.

Sect. 199. Openings in Fire or Party Walls

Openings in the fire or party walls of buildings shall in no case exceed eight feet in width nor ten feet in height and above each such opening there shall be a curtain wall between the top of the opening and the ceiling line of at least three feet. The opening shall be provided with approved automatic self-closing standard fireproof doors on both sides of the wall.

Sect. 200. Public Stairhalls Inclosed—How

Public stairhalls in apartment blocks or tenement buildings over four stories in height or having that portion of the building through which the stairway passes used for any other purpose shall be inclosed by brick walls, or walls of incombustible materials, of equal fire resisting capacity, and openings to separate apartments or tenements shall be by approved fire doors and no transom shall be allowed.

Sect. 201. Walls of Light Shaft—How Constructed

In every building hereafter erected or altered all walls or partitions forming interior light or vent shafts shall be constructed of brick or of other incombustible materials, except that in wood frame tenement or dwelling houses, three stories or less in height, outside the fire limits, they may be constructed of four inch studs filled in solid with fireproofing material, or plastered on both sides on metal lathing, and with masonry fire stops at each floor.

The walls of all light or vent shafts, whether exterior or interior, shall extend at least two feet above the roof, shall be of brick, hollow tile or two inch plank with seven-eighths inch sheathing covered on the shaft side with sheet metal and on the inside with lath and cement mortar when extending through not more than two stories in height and carried not less than two feet above the roof, covered with a ventilating skylight of thin glass set in iron frames with a wire netting beneath.

Sect. 202. Shaft Windows

The windows in said shaft shall have metal frames and sash and wire glass. Ceiling lights under shaft shall have wire glass in metal frames. Where shafts start above the first floor, they shall be supported by steel beams thoroughly fireproofed or wood beams not less than four inches in thickness.

Sect. 203. Walls of Dumb Waiters, Etc.

Walls of dumb waiters, clothes chutes, or other similar shafts must be built of semi-combustible stud partitions covered with metal or wire lath and fire resisting plaster both inside and outside and shall be provided with an approved metal clad door at each opening.

Sect. 204. Ash Receptacles

All receptacles for ashes shall be of galvanized iron, brick, or other incombustible material. When the ash pit is located in the basement or cellar it shall have brick walls at least eight inches in thickness and if the floor over the same is of wood such pit shall be covered over with either brick, arching stone or concrete not less than four inches thick with four inches of air space between the covering of pit and the ceiling except for pits built directly under the trimmer arches of hearths.

No person shall store ashes on a wooden floor or in close proximity to any woodwork whatever.

Sect. 205. Bake Ovens

Bake ovens shall rest on solid foundations or steel beams; the sides and ends shall be at least two feet from any woodwork, and the crown or arch at least four feet from ceilings that have wood joists. The hearth in front of all bake ovens shall extend at least three and one-half feet beyond the face thereof. All woodwork over ovens shall be protected by plastering or metal. Portable bake ovens may be installed if of a pattern approved by the National Board of Fire Underwriters.

Sect. 206. Shaving Pits

Shaving pits in all factories where wood working machinery is used shall be constructed of brick, stone, or other incombustible material, and shall be separated from the boiler room by standard fire doors with bottom sill at least twelve inches above the floor of boiler room. All such factories shall have metal chutes leading to said shaving pits from each wood working machine.

Sect. 207. Walls of Kiln Drys

Walls of kiln drys shall be constructed of brick or other incombustible materials.

Sect. 208. Smoke Houses

All smoke houses shall be of fireproof construction, with brick walls, iron doors and brick or metal roof.

An iron guard shall be placed over and not less than three feet above the grade, and the hanging rails shall be of iron, and an iron grating shall be placed under the first row of hanging rails, and be not less than eight feet above the floor of the fire pit.

The walls of all smoke houses shall be built at least three feet higher than the roof of the building in which they are located, and shall be not less than twelve inches in thickness and be coped with stone or its equivalent.

Sect. 209. Walls of Drying Rooms

All walls, ceilings, and partitions inclosing drying rooms, when not made of fireproof material, shall be lined with a ⅛ inch layer of sheet asbestos and covered with bright tin with lock joints covering all nails.

TITLE X

FLOOR AREAS

Sect. 210. Limit of Floor Areas

The extreme limit of floor areas in specified cases between brick fire walls shall be as follows:

Non-Fireproof Construction.

Any occupancy, height limited to 55 feet.

Area, without Automatic Sprinkler Protection.

Fronting on one street only	5,000 sq. ft.
Fronting on two streets, that is, extending through from street to street . . .	6,000 sq. ft.
Corner building, fronting on two streets	6,000 sq. ft.
Fronting on three streets .	7,500 sq. ft.

Non-Fireproof Construction.

Any occupancy, height limited to 55 feet.

Area, with Automatic Sprinkler Protection (being an increase of 50 per cent over the unsprinkled area).

One street front	7,500 sq. ft.
Two street fronts	9,000 sq. ft.
Corner building, two street fronts	9,000 sq. ft.
Three street fronts	11,250 sq. ft.

Fireproof Construction.

Occupancy, stores, warehouses and factories. Height when not exceeding 55 feet.

Area, without Automatic Sprinkler Protection

Fronting on one street only	10,000 sq. ft.
Fronting on two streets, that is extending through from street to street . .	12,000 sq. ft.
Corner building, fronting on two streets	12,000 sq. ft.
Fronting on three streets .	15,000 sq. ft.

Fireproof Construction.

Occupancy, stores, warehouses and factories. Height when not exceeding 55 feet.

Area, with Automatic Sprinkler Protection (being an increase of 33⅓ per cent over the unsprinkled area).

One street front	13,333 sq. ft.
Two street fronts	16,000 sq. ft.
Corner building, two street fronts	16,000 sq. ft.
Three street fronts	20,000 sq. ft.

Fireproof Construction.

Occupancy, stores, warehouses and factories. Height limited to 100 feet.

Area, without Automatic Sprinkler Protection, same as for non-fireproof construction.

Fronting on one street only	5,000 sq. ft.
Fronting on two streets, that is, extending through from street to street	6,000 sq. ft.
Corner building, fronting on two streets	6,000 sq. ft.
Fronting on three streets .	7,500 sq. ft.

Fireproof Construction.

Occupancy, stores, warehouses and factories. Height limited to 100 feet.

Area, with Automatic Sprinkler Protection (being an increase of 33⅓ per cent over the unsprinkled area).

One street front	6,666 sq. ft.
Two street fronts	8,000 sq. ft.
Corner building, two street fronts	8,000 sq. ft.
Three street fronts	10,000 sq. ft.

Fireproof Construction,

Occupancy, other than stores, warehouses and factories. Height limited to 125 feet.

Area, without Automatic Sprinkler Protection, same as for fireproof construction limited to 55 feet and with Automatic Sprinkler Protection.

Fronting on one street only	13,333 sq. ft.
Fronting on two streets, , extending through et to street . .	16,000 sq. ft.
lding, fronting	16,000 sq. ft.
streets .	20,000 sq. ft.

Fireproof Construction.

Occupancy, other than stores, warehouses and factories. Height limited to 125 feet.

Area, with Automatic Sprinkler Protection (being an increase of 50 per cent over the unsprinkled area).

One street front	20,000 sq. ft.
Two street fronts	24,000 sq. ft.
Corner building, two street fronts	24,000 sq. ft.
Three street fronts	30,000 sq. ft.

TITLE XI

BOILERS, OVENS, AND HEATING APPARATUS

Sect. 211. Flue Connections

All boilers, furnaces, fire places, ovens, and all other heating apparatus, mentioned under this title, shall be properly connected with a flue, chimney, or stack as direct and within the shortest distance possible.

Sect. 212. Temporary Heaters

Temporary heaters for use during the erection of buildings shall be placed upon a layer of brick or a bed of sand four inches thick with legs resting on brick, and shall not be set within five feet of any woodwork, and shall be protected with a sheet iron pan underneath projecting at least six inches beyond the sides of the heater.

Sect. 213. Brick Set Boilers

No brick set boiler for the generation of hot water, or steam for heating or power, or any portable power boiler or engine over ten horse power, shall be placed on any wood or combustible beam or floor.

Sect. 214. Portable Boilers

Wood or combustible floor and beams under and not less than three feet in front and one foot on the sides of all portable boilers shall be protected by a suitable brick foundation of not less than two courses of brick well laid in mortar on sheet iron and asbestos board; the said sheet iron and asbestos shall extend at least twenty-four inches outside of the foundation at the sides and front. Bearing lines of brick, laid on flat with air spaces between them shall be placed on the foundation to support a cast iron ash pan of suitable thickness, on which the base of the boiler shall be placed, and shall have a flange turned up in the front and on the sides, four inches high. Said pan shall be in width not less than the base of the boiler, and shall extend at least two feet in front of it.

If a boiler is supported on a cast iron base, with the bottom of required thickness for an ash pan and is placed on bearing lines of brick in the same manner as specified for an ash pan, then an ash pan shall be placed in front of the said base and shall not be required to extend under it.

All wood casings and beams over and up to a distance of not less than four feet in front of all boilers shall be shielded with plaster or metal. The distance from the top of the boiler to said shield shall be not less than twelve inches.

No combustible partition shall be within four feet of the sides and back and six feet from the front of any boiler, unless said partition shall be covered with metal over asbestos to the height of at least three feet above the floor, and shall extend from the end or back of the boiler to at least five feet in front of it; then the distance shall be not less than two feet from the sides and five feet from the front of the boiler.

Sect. 215. High Pressure Boilers—Located Where

No boiler for the generation of more than ten horse ›wer shall be placed in any frame building. Boilers of more than ten and less than seventy-five horse power shall not be located within eight feet of any frame building; if more than seventy-five and less than two hundred and fifty horse power they shall be at least twenty feet distant from any frame building, and if of greater capacity than two hundred and fifty horse power, they shall not be less than thirty feet distant.

Sect. 216. Boiler and Fuel Rooms—Where Located

Boiler and fuel rooms and smoke houses, which may hereafter be constructed, shall be located not less than eight feet distant from any other building except engine rooms and shall be built throughout of incombustible material. All the openings to such boiler and fuel rooms and smoke houses, if same are located within thirty feet of any other building except engine room shall have shutters and doors of metal, or wood covered with metal on both sides and edges.

Boiler and fuel rooms, when constructed in buildings, shall be separately inclosed in brick walls so arranged that all openings between them and other parts of the building will be securely closed with fire doors at the end of each day's work.

Sect. 217. Inspector to Prescribe for Boiler Rooms, Etc.—When

If any question should arise relating to boiler rooms, fuel rooms, and rooms containing gas or gasoline engines for which there is no provision in this Code, the Inspector of Buildings shall have full power o act, his decision in the matter shall be governed by pan and lower course bricks shall be spaced so as to allow ventilation.

Sect. 220. Cold Air Boxes

The cold air boxes of all hot air furnaces shall be made of metal, brick, or other incombustible material, for a distance of at least ten feet from the furnace, and shall be so constructed as to be kept free from dust.

Sect. 221. Changes in Heating Appliances

In cases where hot water, steam, hot air, or other heating appliances or furnaces are hereafter placed in any building, or flues or fire places are changed or enlarged, due notice shall be given to the Inspector of Buildings by the person or persons placing the said furnace or furnaces in said building, or by the contractor or superintendent of said work.

Sect. 222. Kitchen Ranges

Where a kitchen range is placed within six inches of a wood wainscot or wood partition, the said wood work shall be shielded with metal from the floor to the height of not less than two feet higher than the range.

All ranges on wood or combustible floors and beams, that are not supported on legs and have ash pans three inches or more above their base, shall be set on zinc or brick or cement foundations.

No range shall be placed against a furred wall.

All wood ceilings over all large ranges, and ranges in hotels and restaurants, shall be guarded by metal hoods placed at least nine inches below the ceiling.

A ventilating pipe connected with a hood over a range shall be at least nine inches from all lath and plaster or woodwork and shielded. If the pipe is less than nine inches from lath and plaster and wood work, then the pipe shall be covered with one-half inch of asbestos plaster or other incombustible covering. No ventilating pipe connected with a hood over a range shall pass through any floor unless protected.

Sect. 223. Laundry Stoves—Installation

Laundry stoves on wood or combustible floors shall have zinc or a course of brick, laid on metal, on the floor under and extended twenty-four inches on all sides of them. All laundry stoves and stoves for cooking and heating purposes, shall be properly supported on iron legs resting on the floor one foot from all lath and plaster or two feet from woodwork; if the woodwork is properly protected by a metal shield then the distance shall be not less than one foot. A metal shield shall be placed under and twelve inches in front of the ash pan of all stoves that are placed on wood floors.

Sect. 224. Low and Open Gas Stoves

All low gas stoves shall be placed on iron stands or the burners shall be at least six inches above the base of the stove, and metal guard plates placed four inches below the burners, and all woodwork under them shall be covered with metal. Open gas stoves shall be isolated in the same manner as provided for stoves; if not properly air insulated within themselves, shall be placed two feet distant from all unprotected wood work, or one foot from plastered stud partitions.

The use of gas burners or heaters, located in a floor system under an open register, or on the outside of the firepot of any hot air furnace, in which the products of combustion are allowed to escape into a room, is hereby prohibited, and all such burners or heaters so located shall be removed within forty days after the passage of this Code. All gas ranges and gas stoves shall have vent pipe of suitable size connected with flue.

Sect. 225. Gas Log, Grate, Etc.

No gas log, gas grate, or other gas fireplace heater shall be installed in any building except in a brick fireplace connected with a chimney flue.

Sect. 226. Core and Annealing Ovens--Installation

All core and annealing ovens, or any portable smelting furnaces, shall be set on incombustible hearths with an air space of at least five inches between hearths and the bottoms of such ovens or furnaces. The construction of hearths and protection of surrounding woodwork shall be the same as prescribed for portable boilers, or hot air furnaces.

TITLE XII

STOVE AND SMOKE PIPES

Sect. 227. Flues Lined

All stone or brick hot air flues and shafts, the outer walls of which are less than eight inches through, shall be lined with tin, galvanized iron, or burnt clay-pipes.

Sect. 228. No Wood Around Flues, Etc.

No wood casing, furring, or lath shall be placed against or cover any smoke flue or metal pipe used to convey hot air or steam.

Sect. 229. Stove Pipes Nine Inches From Woodwork

No stove pipe shall be placed nearer than nine inches to any lath and plaster or board partition, ceiling, or any woodwork.

Smoke pipes of large laundry stoves, large cooking ranges, and of furnaces shall not be less than fifteen inches from any woodwork, unless they are properly guarded by metal shields; if so guarded, such pipes shall be not less than nine inches distant.

Sect. 230. Smoke Pipes Through Roofs

No smoke pipe shall pass through the wooden roof of any building unless a special permit be first obtained from the Inspector of Buildings for the same. If a permit is so granted, then the roof through which the smoke pipe passes shall be protected in the following manner: A galvanized iron ventilated thimble of the following dimensions shall be placed: In case of a stove pipe, the diameter of the outside guard shall not be less than twelve inches, and the diameter of the inner one eight inches larger than the smoke pipe, and for all furnaces or where similar large hot fires are used the diameter of the outside guard shall be not less than eighteen inches and the diameter of the inner one twelve inches larger in diameter n the pipe.

The smoke pipe thimbles shall extend from the under side of the ceiling or roof beams to at least nine inches above the roof and they shall have openings for ventilation at the top of the guards above the roof.

Where a smoke pipe of a boiler passes through a wooden roof, the same shall be guarded by a ventilated thimble same as before specified, thirty-six inches larger than the diameter of the smoke pipe of the boiler.

Sect. 231. Smoke Pipes Through Wood Partitions

Where smoke pipes pass through a wood or plastered partition, or furred wall, or floor, they shall be surrounded either by a body of hard incombustible material, measuring at least four inches all around such smoke pipes or they shall be surrounded by a double safety thimble of sheet metal made of two concentric rings of sheet metal at least one inch apart, and the entire thimble so constructed that there will be a circulation of air between the two rings forming same.

No smoke pipe shall project through an external wall unless connected with a chimney or metal stack carried above the roof.

Sect. 232. Distance of Stoves and Smoke Pipes From Woodwork

No stove or smoke pipe or any pipe conducting the products of combustion from any range, oven, or heater shall be concealed in any wood partition or be placed nearer than nine inches to an unprotected lath and plaster or board partition, ceiling, or any wood work.

Sect. 233. Distance of Large Smoke Pipes From Woodwork

Smoke pipes of greater diameter than twelve inches and less area than six square feet, must be at least twenty inches from any woodwork, unless the same is properly protected by a shield, in which case the distance shall not be less than twelve inches.

Smoke pipes larger in area than six square feet shall be kept at least three feet distant from any woodwork unless the same is properly protected by a shield, in which case the distance shall not be less than eighteen inches.

Sect. 234. Size of Metal Shields

The metal shields prescribed in the previous section shall be at least twice the diameter of the pipe in width and shall have a ventilated air space of at least one inch between shield and woodwork.

Sect. 235. Construction of Pipes for Hot Air

Where pipes are used for the distribution of hot air from hot air furnaces in buildings, such pipes must be made of metal and double, the space between the two metal pipes shall be at least three-eighths of an inch; such pipes shall be made with air tight joints and be securely fastened to the partitions through which they ss; or in lieu thereof the pipes may be covered with estos paper, weighing not less than fourteen per one hundred square feet, thoroughly pasted to pipes and also wired every two feet with copper wire, and the studs and other woodwork within one inch of the pipes shall be lined with bright tin and the pipes shall be covered with metal lathing.

Sect. 236. Openings for Registers

The openings in floors for hot air registers shall be surrounded with borders of incombustible material, not less than two inches wide firmly and securely set in place. The register boxes shall be double, the distance between the two thicknesses of tin being at least one inch, or they may be single if covered with asbestos paper and woodwork lined with tin in a similar manner to that specified in the preceeding section for the pipes.

No floor covering or other inflammable material shall be permitted to project into or remain inside of register boxes or hot water pipes.

TITLE XIII

CHIMNEYS, FLUES AND FIREPLACES

Sect. 237. Foundations—How Built.

The foundations of chimneys, flues and stacks, whether inside or outside of buildings, or whether connected with the same or isolated, shall be designed and built in conformity with the provisions relating to foundations of buildings.

When the breast of a chimney or fireplace projects more than four inches it shall be started and built on the same line from the foundation.

Sect. 238. Chimney Construction

All chimneys shall be built of brick, stone, or other fireproof material. The exterior walls of chimneys shall be at least four inches thick and constructed with a suitable flue lining of terra cotta or eight inch walls without lining may be used.

All chimney flues shall be provided with iron clean-out doors at the base of the chimney.

Where chimneys are built in outside walls, the flue lining shall start not less than two feet below the under side of the first floor joists. The flue lining over fireplaces shall commence within two feet of the throat of the fireplace. That portion of the chimney from throat of fireplace to the flue lining shall be thoroughly plastered with cement mortar both inside and outside. When chimneys are built inside without fireplaces, they shall be built plumb from the foundation, and the flue lining shall start not more than two feet from the celler floor and extend up through the roof. No tile shall be used for chimney unless inclosed with four inches of brickwork.

Sect. 239. Distance of Chimneys from Woodwork

Inside of buildings all chimneys of masonry shall be built one inch or more from all woodwork. To steady chimney, brick may be (headed out), in two courses at right angles to each other, against floor joists or trimmers. The space thus made between chimney and woodwork shall be draught-stopped at each floor by fastening sheet metal around the chimney butting the edge against the wall of the same, or filling the space between chimney and floor and ceiling joist trimmers around the chimney with mineral wool.

Sect. 240. Chimneys Corbeled

No chimney shall be corbeled from a wall more than four inches or be hung from a wall less than twelve inches thick unless it projects equally on each side of the wall; nor shall a chimney rest upon any wooden floor, beam or other support.

Sect. 241. Walls of Chimneys

The walls of all chimneys shall rest upon footings at or below the level of the ground, or upon a continuous support of masonry or metal extending to footings as above stated; provided, however, that upon written permission of the Inspector of Buildings chimneys may be built upon a footing or flooring of masonry or concrete supported by iron beams which have secure bearings on masonry, iron, or steel at both ends.

Where chimneys are supported by piers, the piers shall start from the foundation.

When a chimney is to be cut off below, in whole or in part, it shall be wholly supported by stone, brick, iron, or steel.

Sect. 242. Dangerous Chimneys

All chimneys which shall be dangerous in any manner whatever shall be repaired and made safe, or taken down.

Sect. 243. Smoke Flues—Size

No smoke flues shall be less than eight inches by eight inches.

All smoke flues shall be proportioned to the volume of gasses to pass through the same.

Sect. 244. Flue Connections Limited

Not more than two stoves or two furnaces shall be connected with an eight inch by eight inch flue, nor more than four stoves or three furnaces with an eight inch by twelve inch flue.

Sect. 245. Smoke Pipes Entering Flues

Where smoke pipes enter flues, a recess sixteen inches in diameter shall be made through wood partitions or the brickwork must be corbeled out to the face of the studs; the part thus corbeled out shall be laid when chimney is built and shall not be less than sixteen inches by sixteen inches and in no case shall such corbeling exceed the thickness of the wall. Each offset of the corbeling shall be not more than one and one-half inches and trimmers in partitions shall be not less than two inches from the brick above and below such corbeling.

Sect. 246. Thimbles

Galvanized iron thimbles or terra cotta crocks shall be inserted for receiving all smoke pipes and shall be set when chimneys are built.

Sect. 247. Local Vent Connections With Chimney Flues

All connections of local vent pipes, from plumbing fixtures, with chimney flues shall be made with cast or wrought iron pipe; connections shall be as remote as practicable from all wood or other inflammable material set at the time chimney is built whenever possible, bedded in mortar throughout the walls of the chimney and shall project therefrom eight inches of less if approved by the Inspector of Buildings.

Sect. 248. Chimney Tops Above Roofs

Tops of chimneys shall extend at least four feet above flat roofs and as high as the main ridge of pitched roofs, except that chimneys at or near the ridge shall extend at least three feet above the ridge.

Sect. 249. Fireplaces and Chimneys to Have Joints Smooth or Lined

All fireplaces and chimneys in stone or brick walls in any building hereafter erected, except as herein otherwise provided, and any chimney or flue hereafter altered or repaired, without reference to the purpose for which they may be used, shall have the joints struck smooth on the inside, except when lined on the inside with well-burnt clay or terra cotta pipe.

Sect. 250. Size of Fireplaces

All fireplaces shall be at least twenty-four inches wide, and the hearth shall extend at least twelve inches beyond the opening on each side, and at least eighteen inches in front.

Sect. 251. Fireplace—Fire Backs

The fire backs of all fireplaces hereafter erected shall be not less than eight inches in thickness of solid brickwork, nor less than twelve inches if of stone.

Sect. 252. Grate in Fireplaces

When a grate is set in a fireplace a lining of fire brick at least two inches in thickness shall be added to the fire back as prescribed in the previous section unless soapstone, tile, or cast iron is used.

Sect. 253. Walls of High Pressure—Boiler Flues

The walls of all high pressure boiler flues shall be not less than twelve inches thick, and the inside four inches of such walls shall be fire brick, laid in fire mortar, for a distance of twenty-five feet from the source of heat.

Sect. 254. Double Walls for Smoke Flues—When

All smoke flues of smelting furnaces or of steam boilers, or other apparatus which heat the flues to a very high temperature, shall be built with double walls of suitable thickness with an air space between the walls, the inside four inches of the flues shall be of fire brick, laid in fire mortar, for a distance of not less than twenty-five feet from the source of heat.

Sect. 255. Smoke Flues for Existing Buildings

For any now existing brick building where it becomes necessary to provide a smoke flue of larger size than any flue within the building, such flue may be placed on the outside of the building, and be made round in shape and of sheet metal not less than one-eighth of an inch in thickness, properly riveted together at all joints, and carried up to a height not less than ten feet above the roof, and be properly braced at intervals for its entire length, with flat iron bands secured with expansion bolts to the wall, leaving a free air space of not less than four inches between the outside of the metal flue and the brick wall of the building, and have a clean-out door at the bottom. This metal flue shall rest on a suitable cast iron plate at the bottom, supported on a suitable foundation of masonry.

Sect. 256. Iron Cupola Chimneys

Iron cupola chimneys of foundries shall extend at least ten feet above the highest point of any roof within a radius of fifty feet of such cupola and be covered on top with a heavy wire netting, and capped with a suitable spark arrester. No woodwork shall be placed within two feet of the cupola.

Sect. 257. Trimmer Arches for Fireplaces

All fireplaces and chimney breasts, whether intended for ordinary fireplace uses or not, shall have trimmer arches to support hearths, and no woodwork shall be used under such arches. The said arches shall be at least eighteen inches in width, measured from the face of the chimney breast, and they shall be constructed of brick, stone, burnt-clay, or concrete.

The length of a trimmer arch shall be not less than the width of the chimney breast.

Wood centers under trimmer arches shall be removed before plastering the ceiling underneath.

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Sect. 258. Heaters in Fireplaces

If a heater is placed in a fireplace, then the hearth shall be six inches wider than the full width of the heater.

All fireplaces in which heaters are placed shall have incombustible mantles.

Sect. 259. Summer Pieces

No wood mantel or other woodwork shall be exposed back of a summer piece; the ironwork of the summer piece shall be placed against the brick or stonework of the fireplace.

Sect. 260. Fire Board

No fireplace shall be closed with a wood fireboard.

TITLE XIV

FRAME BUILDINGS AND JOISTED MASONRY CONSTRUCTION

Sect. 261. Definition

A frame building shall be taken to mean a building or structure of which the exterior walls shall be constructed of wood. Buildings with wood frames and partially or entirely veneered on the outside with four inches of brickwork or other masonry shall be deemed frame buildings. Wood frames covered with metal shall be deemed frame buildings.

Sect. 262. Location on Lot

Frame buildings shall be located or built not less than two feet from the line of the lot upon which the same is located, when such building is one story in height; and at least three feet from said lot line for buildings two stories in height, and at least four feet from said lot line for buildings three stories in height. (See also Sect. 264).

Sect. 263. Thickness of Underpinning

"Split" Granite underpinning two and one-half feet or less in height shall be not less than six inches thick.

Brick underpinning three feet or less in height shall be not less than eight inches thick; when the height exceeds three feet, the thickness shall be not less than twelve inches.

Cobble stone underpinning three feet or less in height shall be not less than twelve inches thick; when the height exceeds three feet, the thickness shall be not less than sixteen inches.

Underpinning three feet high, built of stone, having level beds and builds, shall be not less than eight inches thick; and when the height exceeds three feet, the thickness shall be not less than twelve inches.

Sect. 264. Height—Blocks of Frame Buildings

No frame dweling shall be hereafter erected or altered to exceed three stories in height or to be occupied by more than six families. But nothing herein shall be taken to prevent the alteration of buildings occupied by more than six families and existing previous to the passage of this Code provided that such alterations do not increase the number of families occupying the same; neither shall anything herein be taken to prevent the construction of blocks of frame buildings separated by fire walls as specified in this Code. (See Sect. 198, "Dividing Partitions in Blocks of Frame Houses.")

Sect. 265. Inclosing Walls

In all frame dwellings hereafter erected, that are three stories in height, the outside or inclosing studs shall be not less than two inches by four inches or its equivalent in strength, and a four inch by six inch girt shall be placed at the level of first story ceiling, or at the top of the second story floor timbers.

All girts in frame buildings shall be not less than four by six inches.

All plates in frame buildings shall be not less than four by four inches.

All corner and intermediate posts in outer walls of frame buildings shall be not less than four inches by six inches.

Sect. 266. Intermediate Posts — Required When

Every three story frame building shall have besides corner posts, continuous intermediate posts, located at principal cross partitions, in all sides exceeding twenty feet in length.

Sect. 267. Structural Members

All beams, girders, columns, trusses, and other structural members shall be proportioned of sufficient strength to sustain the load to be supported. In all cases suitable provisions shall be made to take up and properly distribute the stresses due to concentrated or eccentric loading, and also to prevent danger from horizontal or vertical deflection or the buckling or shear of the members. (See Tables for Factor of Safety).

Sect. 268. Fire Stops

The spaces between the studs on the top of first floor joists of outside and inside walls of all frame buildings shall be closed with two inch fire stops, shutting off all spaces. On all the other floors (and including all attics) of frame buildings constructed with a "Ledger" board, the spaces on the under side and also on top of joists shall be filled with a fire stop not less than two inches thick, securely fastened and properly fitted to fill voids between outside studding.

The spaces between the floor joists, where they rest upon the bearing partitions, shall be stopped. The stop shall be of the same material as the partition, but no stop shall be less than two inches thick the full width of the floor timbers.

Sect. 269. Wood Beams in Buildings of Incombustible Construction

All wood beams and other timbers in any wall of a building built of stone, brick, concrete or iron, shall be separated from the beam or timber entering in the opposite side of the wall by at least four inches of solid mason work; such separation may be obtained by corbeling or by staggering the beams.

Sect. 270. Openings for Pipes to be closed with Incombustible Material

After pipes are in place in a building all openings made through floors for the running of said pipes shall be closed with incombustible material.

Sect. 271. Beams and Timbers Cut for Pipes

No beams or other timbers shall be cut for pipes or tubes in any manner which shall impair the strength of the timbers; and in no case shall they be cut further from the bearings than twice the depth of the timber. When studs are cut more than one-third their depth they shall be reinforced. All cutting shall be done by or under the direction of the carpenter. Joists shall be bored near the middle for pipes when it is impossible to place them as above provided.

Sect. 272. Drawings and Strain Sheets—When Furnished

Drawings of all trusses and special or unusual framing showing sizes of members, shall be submitted with plans and specifications to the Inspector of Buildings and when required by the Inspector a strain sheet showing stresses in truss members shall be submitted.

Sect. 273. Interior Studding

All interior studding shall be but one story in height, set on caps or soles, except where partitions are over girders; the studding shall be seated on the girders and have caps not less than three inches thick with two inch fire stops at each story, except that caps may be two inches thick in other than carrying partitions.

Sect. 274. Wood Trimmer and Header Beams

All wood trimmer and header beams shall be proportioned to carry with safety the loads they are intended to sustain.

Sect. 275. Ends of Tail Beams

The ends of all tail beams shall be properly framed or thoroughly spiked into the header beams. In calculation of stresses, the factors of safety shall be used as given under the head (Factor of Safety) in this Code.

Sect. 276. Joist Hangers

In all eight inch division walls, joists shall not rest in the wall, but shall be supported upon approved joist hangers, unless the wall is corbeled so as to keep the ends of joists four inches apart.

The ends of all beams and joists buried in masonry walls shall be beveled so that no level portion of the top shall enter the wall.

Sect. 277. Walls Anchored

Walls shall be anchored to ends of joists every five or six feet by wrought iron anchors not less than one-quarter of an inch by one and one-half inches and not less than sixteen inches long. Anchors shall be fastened to lower half of timber.

Walls running parallel to joists shall be anchored by similar anchors extending over two joists.

Sect. 278. Wall Plates

Wall plates shall be anchored to walls every five or six feet.

Sect. 279. Woodwork One Inch from Chimney

No timber or other woodwork shall be placed within one inch of the outside of the wall of any chimney or flue. The space thus made between chimney and woodwork shall be fire stopped at each floor (including the attic) by sheet metal fastened to the floor, and ceiling joists, the edge butting against the walls of the chimney, or by filling the space between chimney and floor and ceiling joist trimmers with mineral wool.

Sect. 280. Girder Ends in Walls

The ends of girders buried in walls shall have an air space around them.

Sect. 281. Wood Floor and Roof Joists, Bridged

All wood floor and wood roof timbers shall be properly bridged with cross bridging, and the distance between bridging or between bridging and walls, shall not exceed eight feet.

Sect. 282. No Wood Posts in Cellars

Wood posts will not be allowed in cellars of buildings that are plastered.

Sect. 283. Loads in Frame Buildings

Frame buildings shall not be calculated or constructed to carry less than the minimum floor and roof loads specified in the tables of this Code.

Sect. 284. Sills

Sills in frame buildings shall not be less than four inches by six inches.

Sect. 285. Girders

Girders shall not be less than six inches by eight inches and shall be of sufficient strength to carry the superimposed load.

Sect. 286. Temporary One Story Building

Temporary one story frame buildings may be erected for the uses of builders within the limits of lots whereon buildings are in course of erection, or on adjoining vacant lots, upon permits issued by the Inspector of Buildings.

TITLE XV

MILL CONSTRUCTION

Sect. 287. Definition

That form of construction in which the walls are of masonry and heavy posts and girders with wide spacing support floors and roofs of heavy planking.

Sect. 288. Size of Timbers

In mill construction, no timber shall be less than six inches in either of its cross dimensions and no concealed space shall be left in wood partitions or between ceiling and top of floor above.

Floor and roof planking of more than five foot span shall not be less than two and three-quarters inches in thickness.

Sect. 289. Caps for Wood Posts

Wood posts shall have cast iron caps and bases with pintle connections, or steel or iron box caps with projections for receiving ends of girders made so that girders shall be self-releasing.

TITLE XVI

FIREPROOF CONSTRUCTION

Sect. 290. Required When

Fireproof construction shall be required in:

(a) Every building hereafter erected or altered to be used for any purpose, over four stories in height, or four stories and basement, or over fifty-five feet in height.

(b) All public buildings and all other buildings hereafter erected or altered to be used as hotels or lodging houses over three stories in height, or three stories and basement, or forty-five feet in height. Or buildings containing an assembly hall, all schools, hospitals, or asylums over two stories and a basement. Except in all cases under heading "b" where the first and second floors are made of fireproof construction, one extra story in height is allowed. Provided, however, that all the hallways, stairways and corridors in each and every building described in this heading "b" shall be made of fireproof construction.

(c) All theatres hereafter constructed, or buildings altered to be used for such, having a seating capacity of eight hundred or more.

(d) All buildings used for the storing of petroleum or other articles of a like nature.

Sect. 291. Construction

A building shall be considered fireproof when constructed with walls of brick, stone, Portland cement concrete, iron or steel, in which wood beams or lintels shall not be placed, and in which the floors and roofs shall be constructed with rolled wrought iron or steel reinforced concrete, floor beams and girders so arranged as to spacing and length of beams that the load to be supported by them, together with the weights of the materials used in the construction of the said floors, shall not cause a greater deflection of the said beams than one-thirtieth of an inch per foot of span under the total load. The beams shall be sufficiently tied together at intervals of not more than eight times the depth of the beam. (See Sections 299, 317 and 318.)

Sect. 292. Brick Arches Between Floor and Roof Beams

Between the floor and roof beams shall be placed brick arches springing from the lower flanges of the steel beams, or the spaces between the beams may be filled with hollow tile arches of hard-burnt clay or porous terra cotta, or arches of Portland cement concrete, plain or reinforced with metal, or other fireproof composition may be used, provided that in each and all cases the strength and method of construction shall conform to the requirements of the following section. (See also Sect. 299, "Brick Arches between Steel Floor Beams.")

Sect. 293. Stairs and Landings

The stairs and staircase landings shall be constructed of brick, stone, Portland cement concrete, iron or steel, or a combination of these materials.

Sect. 294. Inflammable Materials Allowed—When

No woodwork or other inflammable material shall be used in any of the partitions, furring or ceilings in any such fireproof buildings, excepting, however, that when the height of the building does not exceed six stories nor more than eighty feet, the doors and windows and their frames and trims, the casings, the interior finish when filled solidly at the back with fireproof materials, and the floor boards and sleepers directly thereunder, may be of wood, but the space between the sleepers shall be solidly filled with fireproof materials extending up to the underside of the floor boards.

Sect. 295. Floor Surfaces of Incombustible Materials

When the height of a fireproof building exceeds six stories, or more than eighty feet, the floor surfaces shall be of stone, cement, tiling, or similar incombustible material. All outside window frames and sash shall be of metal.

The inside window frames and sash, doors, trim, and other interior finish may be of metal or of wood covered with metal, or of such other incombustible material that may be approved by the Inspector of Buildings.

No building shall exceed ten stories nor more than one hundred and twenty-five feet in height other than chimneys, monuments and church spires.

Sect. 296. Fireproof Partitions

All hall partitions, or permanent partitions between rooms in fireproof buildings shall be built of fireproof material and shall not be started on wood sills, nor on wood floor boards, but be built upon the fireproof construction of the floor and extend to the fireproof arches above.

The tops of all door and window openings in such partitions shall be at least twelve inches below the ceiling line.

Sect. 297. Openings in Fireproof Partitions

In all fireproof partitions other than when made of solid brickwork, the openings for doors and windows in same shall be framed on both sides with iron studs or uprights secure at top and bottom to the floor construction, and with like iron horizontals between the said uprights for the window and door heads.

Sect. 298. Stair Halls—When Inclosed

In all fireproof buildings, other than stores, warehouses and factories, if exceeding three stories or forty feet in height, the stair halls shall be inclosed on each story with fireproof material, same as required for elevators, to so form an inclosure the floor area of which shall not be more than three times the united area of the floor openings for the elevators and stairs.

Sect. 299. Brick Arches Between Steel Floor Beams

Between the wrought iron or steel floor beams shall be placed brick arches springing from the lower flanges of the steel beams.

Said brick arches shall be designed with a rise to carry safely the imposed load, but never less than one and one-quarter inches for each foot of span between beams, and they shall have a thickness of not less than four inches for spans of six feet or less, and eight inches for spans over six feet, or such additional thickness as may be required by the Inspector of Buildings.

Said brick arches shall be composed of good hard brick or hollow brick of ordinary dimensions laid to a line on the centers, properly and solidly bonded, each longitudinal line of brick breaking joints with the adjoining lines in the same ring and with the ring under it, when more than a four-inch arch is used. The said arches shall spring from protecting skewbacks of burnt clay resting on and covering the lower flanges of the beams, so as to afford a minimum protection of two inches of solid burnt clay material underneath the flanges, or otherwise entirely incasing the said flanges as provided for in this section. The brick shall be well wet and the joints filled in solid with strong Portland cement mortar. The arches shall be well grouted and properly keyed.

Or the spaces between the beams may be built with hollow tile arches and hard burnt clay semi-porous or porous terra cotta of uniform density and hardness of burn. The shells and webs of hollow tile arch blocks shall not be less than five-eighths of an inch in thickness, if of dense or semi-porous terra cotta, or one inch if of porous terra cotta.

Sect. 300. Skewbacks Used—When

Skewbacks shall be used in all forms of hollow tile arches and be of such form and section to properly receive the thrust of the arches. The shells and webs of the skewbacks shall not be less than three-quarters of an inch in thickness, if of dense or semi-porous terra cotta, or one inch if of porous terra cotta, except that the portion extending under the lower flange of the beams shall not be less than one and one-half inches of solid material not interrupted by any interior cavities or spaces.

The said arches shall be of a depth and sectional area to carry the load to be imposed thereon without straining the material beyond its safe working load, but the thickness of the shells and webs shall in no case be less than herein required and the depth shall not be less than one and one-half inch per foot of span, not including any portion of the depth of the tile projecting below the underside of the beam.

The joints shall be solidly filled with strong Portland cement mortar of one part Portland cement, three parts sand, and not more than one-tenth part lime putty, and the arch so constructed that the key parts shall always fall in the central portion. The shells and webs of all end construction blocks shall abut one against another.

Sect. 301. Concrete Arches Instead of Skewbacks

Or the space between the beams may be filled with arches of Portland cement concrete, segmental in form, and which shall have a rise of not less than one and one-quarter inches for each foot of span between the beams.

The concrete shall be not less than four inches in thickness at the crown of the arch and shall be mixed in the proportions required by this Code. These segmental arches, if reinforced, shall in all cases be reinforced or protected with steel rods or bars, reticulated or meshed steel, or similar metal weighing not less than one pound per square foot, and having openings not larger than three inches square. Such reinforcing metal, if essential to secure the required strength of the arches, shall be so imbeded that the metal is covered by not less than one inch of concrete; but if used partially or wholly as a centering for, and if not essential to secure the required strength of the arches, the metal centering need not be wholly imbedded in concrete.

Sect. 302. Concrete Used in Freezing Weather

Concrete shall not be mixed or deposited at a freezing temperature unless special precautions are taken to avoid the use of materials containing frost, or covered with ice crystals and to provide means to prevent the concrete from freezing after being placed in position until it is thoroughly hardened. Any concrete damaged by freezing or otherwise shall be removed.

Sect. 303. Slabs Between Beams

Or between the said beams may be placed solid or hollow burnt clay, brick or concrete slabs in flat or curved shapes, concrete or other fireproof composition, and any of said materials may be used plain or in combination with wire cloth, expanded metal, wire-strands, or wrought iron or steel bars; same metal if used to be in all cases so imbeded in the fireproof composition or combination that the metal shall be covered by not less than one inch of the fireproof material; but in any unusual construction and as a precedent condition to the same being used, tests shall be made as herein provided by the manufacturer, owner, or patentee thereof under the direction and to the satisfaction of the Inspector of Buildings, and evidence of the same shall be kept on file in the office of the said Inspector, showing the nature and results of the tests.

Sect. 304. Tests of Slabs

Such tests shall be made by constructing within inclosure walls a platform consisting of four rolled steel beams, ten inches deep, weighing each tweny-five pounds per lineal foot, and placed four feet between the centers, and connected by transverse tie rods, and with a clear span of fourteen feet for the two interior beams and with the outer beams supported on the side walls throughout their length, and with both a filling between the said beams and a fireproof protection of the exposed parts of the beams of the system to be tested, constructed as in actual practice, with the quality of material ordinarilly used in that system and the ceiling plastered below, as in a finished job; such filling between the two interior beams being loaded with a distributed load of 150 pounds per square foot of its area and all carried by such filling, and subjecting the platform so constructed to the continuous heat of a wood fire below, averaging not less than 1700 degrees of Fahrenheit for not less than four hours, during which time the platform shall have remained in such condition that no flame will have passed through the platform or any part of the same, and that no part of the load shall have fallen through and that the beams shall have been protected from the heat to the extent that after applying to the underside of the platform at the end of the heat test a stream of water directed against the bottom of the platform and discharged through a one and one-eighth inch nozzle under sixty pounds pressure for five minutes, and after flooding the top of the platform with water under low pressure, and then again applying the stream of water through the nozzle under the sixty pounds pressure to the bottom of the platform for five minutes, and after a total load of 600 pounds per square foot uniformily distributed over the middle bay shall have been applied and removed, after the platform shall have cooled, the maximum deflection of the interior beams shall not exceed one and one-half inches.

The Inspector of Buildings may from time to time prescribe additional or different tests than the foregoing for systems of filling between iron or steel floor beams, and the protection of the exposed parts of the beams. Any system failing to meet the requirements of the test of heat, water and weight as herein prescribed, shall be prohibited from use in any building hereafter erected. Duly authenticated records of the test heretofore made of any system of fireproof floor filling and protection of the exposed parts of the beams may be presented to the Inspector of Buildings and if the same be satisfactory to said Inspector, it shall be accepted as conclusive.

Sect. 305. Filling Placed in Freezing Weather

No filling of any kind which may be injured by frost shall be placed between said floor beams during freezing weather, and if the filling is placed during any winter month, it shall be temporarily covered with siuitable material for protection from being frozen.

Sect. 306 Cinder Concrete Used—When

On the top of any arch, lintel, or other device which does not extend to the plane of the underside of the floor finish, cinder concrete or other suitable fireproof material shall be placed to solidly fill up the space to a level with the top of said floor beams, and shall be carried to the underside of the wood floor boards in case such be used.

Cinder concrete for filling shall be made with not less than one part of Portland cement, two parts sand, and five parts of hard coal boiler cinders, and the top flanges of all beams shall be entirely imbeded in same to a depth of not less than two inches.

Sect. 307. Concrete Hard Before Forms Removed

Under no consideration shall forms be removed until the concrete has hardened sufficiently to permit their removal with safety.

Sect. 308. Swelling of Floors

In laying the floors in masonry buildings, provision shall be made to allow for the swelling of floors to prevent throwing out or buckling of walls.

Sect. 309. Strength of Fireproof Floors

All fireproof floor systems shall be of sufficient strength to safely carry the load to be imposed thereon without straining the material in any case beyond its safe working load.

Sect. 310. Openings to Appear on Plans

Openings through fireproof floors for pipes, conduits, and similar purposes shall be shown on plans filed with the Inspector of Buildings.

After the floors are constructed no opening greater than eight inches square shall be cut through said floors, unless properly boxed or framed around with iron; and such openings shall be filled in with fireproof material after the pipes and conduits are in place.

Sect. 311. Fireproof Roofs

Every fireproof roof hereafter placed on any building shall have, besides the usual scuttle or bulkhead, a skylight or skylights.

Sect. 312. Columns to be Protected

All cast iron, wrought iron, or rolled steel columns, including the lugs and brackets on same, used for vertical supports in the interior of any fireproof building, or used to support any fireproof floor, shall be entirely protected with not less than four inches of hard-burnt brickwork, terra cotta, concrete, or other fireproof material, without any air space next to the metal, securely applied; but no plaster of paris or lime mortar shall be used for this purpose, nor shall any plaster, whether or not on metal lathing, be considered a part of the covering required.

Sect. 313. Size of Block Column Covering—How Laid

No single block or unit of insulating material used for column covering shall have a greater vertical dimension than twelve inches when placed in position, nor shall the shell and webs of hollow tile or terra cotta blocks be less than one inch in thickness, and these blocks shall be laid up with Portland cement mortar, and the said blocks be suitably tied or anchored together.

The extreme outer edges of lugs, brackets and similar supporting metal may project to within seven-eighths of an inch of the surface of the fireproofing.

The fireproof coverings shall start upon the fireproof floors, and continuously extend to the fireproof ceilings or underside of girders above, and be entirely independent of any ornamental base or capital.

Sect. 314. No Pipes to be Incased

No pipes, wires, or conduits of any kind shall be incased in the fireproofing surrounding any column, girder, or beam of steel or iron, but shall be placed outside of such fireproofing.

Sect. 315. Fireproof Protection Jacketed

Where the fireproof protection of columns is exposed to the damage from the trucking or handling of merchandise, such fireproof protection shall be jacketed on the outside for a height not less than four feet from the floor with sheet metal, or with vertical strips of oak; and if the oak be used for such purpose the vertical strips shall be sufficiently separated from each other always to show that the woodwork of the guard has been placed entirely on the outside of the fireproof material which incases the metal column.

Sect. 316. Exposed Sides of Girders and Beams to be Incased

The exposed sides of wrought iron or rolled steel girders supporting walls, iron or steel floor beams, or supporting floor arches or floors, shall be entirely incased with hard-burnt clay, porous terra cotta, concrete or other fireproof material not less than four inches in thickness, and the bottom and top plates and flanges of such girders shall have not less than two inches in thickness of such insulating material.

Sect. 317. Plates and Flanges Incased

The bottom and top plates and flanges of all wrought-iron and rolled-steel floor and roof beams, and all exposed portions of such beams below the abutments of floor arches or filling between the floor beams shall be entirely incased with hard-burnt clay, porous terra cotta, concrete, or other fireproof material, such incasing material to be not less than two inches in thickness. The soffits of all floor beams in flat ceilings shall be protected by not less than one inch of fireproof material.

Sect. 318. Incasing Material Attached

All incasing material shall be securely attached to the girders and beams.

Sect. 319. Shells and Webs—Thickness

The shells and webs of hollow tile blocks used for girder and column coverings shall be not less than three-quarters of an inch in thickness, porous terra cotta, and shall be laid up with strong Portland cement mortar, and the said blocks be suitably tied or anchored together.

Sect. 320. Columns as Supports—Material

Where columns are used to support iron or steel girders carrying inclosure walls, the said columns shall be of cast iron, wrought iron or rolled steel, and on their exposed surfaces be constructed to resist fire by having a casing of brickwork not less than eight inches in thickness on the outside surfaces, not less than four inches in thickness on the inside surfaces, and all bonded into the brickwork for the inclosure walls.

Between the said inclosing brickwork and the columns, there shall be a space of not less than two inches, which space shall be filled solidly with liquid cement grout as the courses of brickwork are laid.

Sect. 321. Exposed Sides of Girders Covered

The exposed sides of wrought iron or steel girders shall be similarly covered in with brickwork not less than four inches in thickness on the outer surfaces and tied and bonded, but the extreme outer edge of the flanges of beams or plates or angles connected to the beams may project to within two inches of the outside surface of the brick casing.

Sect. 322. Inside Surfaces of Girders Protected

The inside surfaces of girders may be similarly covered with brickwork, or if projecting inside of the wall, they shall be protected by terra cotta, concrete, or other fireproof material not less than four inches in thickness.

Sect. 323. Girders of Inclosure Walls

Girders for the support of the inclosure walls shall be placed at the floor line of each story.

Sect. 324. Skeleton Steel Frames Not to be Bolted to Another

The skeleton steel frame of a building shall be independent from that of an adjoining building, and the frame of one building shall not be bolted or riveted in any manner to the frame of any other building.

TITLE XVII

REINFORCED CONCRETE OR CONCRETE CONSTRUCTION

Sect. 325. Definition

The term "reinforced concrete" or "concrete steel" in this section shall be understood to mean an approved concrete mixture reinforced by steel of any shape, so combined that the steel will take up the tensional stresses and assist in the resistance to shear.

Sect. 326. Used in Fireproof Buildings—When

Reinforced concrete construction may be accepted for fireproof bulldings if designed as hereinafter prescribed: provided, that the aggregate for such oncrete shall be hard-burnt broken bricks, or terra cotta, clean broken stone, or furnace slag, or clean gravel, together with clean siliceous sand, if sand is required to produce a close and dense mixture; and provided further that the minimum thickness of concrete surrounding the reinforcing members one-quarter inch or less in diameter shall be one inch; and for members heavier than one-quarter inch, the minimum thickness for protecting concrete shall be four diameters, taking that diameter, in the event of bars of other than circular cross-section, which lies in the direction in which the thickness of the concrete is measured, but no protecting concrete need be more than four inches thick for bars of any size; and provided further that all columns and girders of reinforced concrete shall have at least one inch of material on all exposed surfaces over and above that required for structural purposes; and all beams and floor slabs shall have at least three-quarters inch of such surplus material for fire-resisting purposes; but this shall not be construed as increasing the total thickness of protecting concrete as herein specified.

Sect. 327. Requirements for Reinforced Concrete Filling

All the requirements herein specified for protection of steel and for fire resisting purposes shall apply to reinforced concrete filling between rolled steel beems, as well as to reinforced concrete beams and to entire structures in reinforced concrete.

Any concrete structure or the floor filling in same, reinforced or otherwise, which may be erected on a permanent centering of sheet metal, or metal lathing and curved bars or a metal centering of any form, must be strong enough to carry its loads without assistance from the centering, unless the concrete is so applied as to protect the centering as herein specified for metal reinforcement.

Sect. 328. Exposed Metal Not a Strength Factor

Exposed metal centering or exposed metal of any kind shall not be considered a factor in the strength of any part of any concrete structure, and a plaster finish applied over the metal shall not be deemed sufficient protection.

Sect. 329. Concrete Thoroughly Mixed

All concrete for reinforced concrete construction whenever used in such buildings must be thoroughly mixed.

Sect. 330. Complete Drawings to be Filed

Before permission to erect any concrete steel structure is issued, complete drawings and specifications shall be filed with the Inspector of Buildings, showing all details of the construction, the size and position of all reinforcing rods, stirrups, etc., and giving the composition of the concrete.

The execution of the work shall be performed by workmen under the direct supervision of a competent foreman or superintendent.

Sect. 331. Forms—How Built

All forms and centering for concrete shall be built plumb and in a substantial manner with inside surfaces smooth and made tight so that no part of the concrete mixture shall leak out through the joints, cracks, or holes, and after completion shall be thoroughly cleaned out, removing shavings, chips, pieces of wood and other material, which should not be permitted in forms.

Sect. 332. Reinforcing Steel Located in Forms

The reinforcing steel shall be accurately located in the forms and secured against displacement while the concrete is being placed and tamped.

Sect. 333. Concrete Where Placed in Forms

Concrete shall be placed in forms as soon as practicable after mixing, and in all cases immediately after the addition of water.

Sect. 334. Fresh Concrete Joining Old

Whenever fresh concrete joins concrete that is set, or partially set, the surface of the old concrete shall be roughened, cleaned, and thoroughly slushed with a grout of neat cement and water.

Sect. 335. Concrete Used in Freezing Weather

Concrete shall not be mixed or deposited at a freezing temperature, unless special precautions are taken to avoid the use of materials containing frost, or covered with ice crystals and to provide means to prevent the concrete from freezing after being placed in position until it is thoroughly hardened.

Sect. 336. Forms When Removed

Under no consideration shall forms be removed until the concrete has hardened sufficiently to permit their removal with safety.

Sect. 337. Concrete Mixture

The concrete shall be mixed in such proportions that the resistance of the concrete to crushing shall not be less than two thousand pounds per square inch after hardening for twenty-eight days. The tests to determine this value must be under the direction of the Inspector of Buildings. The concrete used in concrete steel construction must be what is usually known as a "wet" mixture. See "Concrete Mixing," Section 87.

Sect. 338. Portland Cements Only Allowed—Tests

Only high grade Portland cements shall be permitted in reinforced concrete or concrete-steel constructed buildings. Such cement, when tested neat, shall after one day in air, develop a tensile strength of at least two hundred pounds per square inch ; and after one day in air and six days in water shall develop a tensile strength of at least five hundred and fifty pounds per square inch; and after one day in air and twenty-seven days in water shall develop tensile strength of at least six hundred and fifty pounds per square inch. Other tests, as to fineness, constancy, or volume, etc., may from time to time be prescribed by the Inspector of Buildings.

Test for cement mortar :

One part cement, three parts standard sand.

Seven days (one day in moist air, six days in water)	175 lbs.
Twenty-eight days (one day in moist air, twenty-seven days in water)	300 lbs.

Eight inch cubes for testing shall be furnished by the contractor as required.

The sand to be used must be clean, sharp grit sand, free from impurities, and shall be equal to the sample kept by the Inspector of Buildings. Tests of sand may be required by the Inspector of Buildings.

The stone used in the reinforcing concrete shall be a clean, broken stone of a size that will pass through a one inch ring, or good gravel may be used in the same proportion as broken stone. For slabs, broken hard bricks, or terra cotta, or furnace slag may be used.

The steel shall meet the requirements as specified in this Code.

TITLE XVIII.

TRUSSED CONCRETE CONSTRUCTION.

Sect. 339. Definition

Trussed concrete construction is any construction made of reinforced or armored concrete, in which the concrete mixture shall be of such proportions that its resistence to crushing shall not be less than two thousand pounds per square inch, after hardening twenty-eight days and that shall be of such proportions that the cement shall exceed by at least ten pet cent in volume the voids in the aggregate, and that the aggregate shall be of such proportions that the finer particles shall exceed by ten per cent in volume the voids in the aggregate, and the aggregate shall be of such proportions that the finer particles shall exceed by ten (10) per cent in volume the voids in the coarser particles, and the steel reinforcement is of such shape and so combined with the concrete that the steel may be made to assist in the resistance to compression and will take up the tensile stresses and assist in the resistance to shear along proper structural lines, so that the internal stresses and resistances of the combination can be ascertained by computation and verified by tests, as prescribed in this Code.

Sect. 340. Stresses Allowed

Trussed concrete shall be so designed that the stresses in the concrete and steel shall not exceed the following limits :

	Pounds per sq. ft
Extreme fibre stress in concrete in compression (see exceptions below)	600
The shearing stress in concrete, and the adhesion of the concrete to steel	75
Concrete in direct compression (see exceptions below)	450
Tensile stress in steel, (see exceptions below)	16,000
Tensile stress in medium steel	14,000
Compression in steel	12,000
Shearing stress in steel	10,000
The ratio of moduli of elasticity of concrete and steel	1 to 15

Sect. 341. Resistance of Concrete Members

The following assumption shall guide in determining the resistance of any trussed or reinforced concrete member:

(a) *Bending Moments.*—For bending moments due to external forces, lintels, joists, beams, and girders, shall be considered as simply supported at the ends, unless made monolithic with trussed concrete columns or continuous over-supports, when they shall be so constructed as to provide not less than fifty per cent as much reinforcement in the top over same, as is provided in the bottom. When so provided with reinforcement at the supports, the bending moment may be taken at not less than W times L divided by ten (10) for uniformly distributed loads, provided this reinforcement is made to extend twenty-five times its cross area dimension beyond the support for corrugated, twisted or trussed bars and have the end hooked down three diameters, in addition, for plain bars.

Lintel or slab concrete floor plates, of uniform thickness, formed of trussed concrete, when considered continuous, and when provided with reinforcement at the top of plate over supports, as provided above, may be treated as continuous beams; the bending moment for uniformly distributed loads being taken at not less than W times L divided by ten (10) for lintel concrete plates, and when W times L divived by fifteen (15) for slab armored concrete plates, in which the longer side does not exceed by more than one and one-half times the shorter side.

The trussed concrete floor plates, to the extent of not more than six (6) times the width on any joist, beam or girder, may be taken as part of that joist, beam or girder in computing the moment of resistance.

(b) *Moment of Resistance.*—In the formula to determine the moment of resistance the following may be assumed; that the stress in any fibre is directly proportional to its distance from the neutral axis; provided the bond between the concrete and steel is sufficient to make the two materials act together as a homogeneous solid; that the strain in any fibre is directly proportional to the distance of that fibre from the neutral axis, provided the bond between the concrete and steel is sufficient to make the two materials act together as a homogeneous solid; that the strain in any fibre is directly proportional to the distance of that fibre from the neutral axis, provided the modulus of elasticity of the concrete remains constant within the limits of the working stresses fixed in this Code.

(c) *Shearing.*—When the shearing stresses developed in any part of a trussed concrete construction, either vertical or horizontal, exceed the safe working strength of concrete as fixed in this Code, a sufficient amount of steel, of such shape as to insure a mechanical bond, shall be introduced in such a position that the deficiency in the resistance to shear is overcome.

Sect. 342. Spacing of Compression Rods

The spacing of the extreme compression rods in the opposite sides or ends of the diameter from center to center or between the neutral axis of other shapes in a trussed concrete column, shall not be less than one (1) to sixteen (16) of the least side or diameter of the column in the rough to its clear height.

The rods or shapes shall be tied or latticed together at intervals not exceeding twelve inches. When compression rods are not required, reinforcing bars shall be used equivalent to three-quarters of one per cent of the cross sectional area of the column.

Sect. 343. Monolithic Beams and Girders

When continuous beams or girders are made monolithic with or rigidly attached to trussed or reinforced concrete columns, the latter shall be designed to resist a bending moment equal to the greatest possible unbalanced moment in the beams or girders at the columns, in addition to the direct loads for which the columns are designed.

Sect. 344. Filled Columns

Columns composed of structural steel shapes or bars latticed together by riveting and filled in solidly and surrounded by concrete as prescribed in this chapter, may be proportioned by assuming that the concrete inclosed within the outer flanges or faces of the shapes or bars takes up a proportional part of the superimposed load within its limit of stress, provided that the total assumed load on the concrete or steel column combined does not exceed a factor of three, if assumed to be carried on the unfilled column when free-standing.

Sect. 345. Outer Shell Covering Only Considered Fireproof

The outer shell of a trussed concrete or a concrete filled steel column shall be considered only as a fireproof covering.

When a steel column or an iron column is to be double covered the outer shell shall be made with armored concrete of small mesh.

Sect. 346. Thickness of Concrete Covering

The thickness of the concrete on the bottom or exposed side of any reinforcing steel member of a "trussed" concrete lintel, joist, beam, girder, or column shall not be less than two inches, and not less than one inch at the bottom of any "trussed" concrete "lintel," or "slab" floor plate.

Sect. 347. Steel Requirements

The steel reinforcement in concrete shall meet all the requirements of this Code relative to steel construction, except that it shall not be painted, but shall be free from all mill-rust and scale.

Such steel shall have an ultimate strength of at least sixty thousand pounds per square inch and an elastic limit not less than one-half of the ultimate strength.

Percentage of elongation, 1,400,000 divided by ultimate strength, except that the minimum elongation shall not be less than twenty per cent. Such steel shall also stand a cold bending test of 180 degrees to a diameter equal to the thickness of the piece tested, without fracture on outside of bent portion. Provided, that steel having an ultimate strength of not less than fifty-four thousand pounds per square inch may be used, if the unit stresses as prescribed in Section 340 be reduced ten per cent. For exception see Section 341.

Sect. 348. Trussed Concrete Floors

A trussed concrete floor system is a system which employs trussed or reinforced concrete for all its members except the columns.

TITLE XIX.

STEEL AND WROUGHT IRON CONSTRUCTION.

Sect. 355. Thickness of Column

No part of a steel or wrought iron column shall be less than one-quarter of an inch thick.

Sect. 356. Unsupported Length

No wrought iron or rolled steel column shall have an unsupported length of more than forty times its least lateral dimension or diameter, except as prescribed in this Code, and also except in such cases as the Inspector of Buildings may specially allow a greater unsupported length.

Sect. 357. Ends of Columns

The ends of all columns shall be faced to a plane surface at right angles to the axis of the columns.

And the connection between them shall be made with splice plates.

The joint may be effected by rivets of sufficient size and number to transmit the entire stress, and then the splice plates shall be equal in sectional area to the area of column spliced.

Sect. 358. Spliced Columns

When the section of the columns to be spliced is such that spliced plates cannot be used, a connection formed of plates and angles may be used, designed to properly distribute the stresses.

Sect. 359. Materials to be Used

No material, whether in the body of the column or used as lattice-bar or stay-plate, shall be used in any wrought iron or steel column of less thickness than one-thirty-second of its unsupported width measured between centers of rivets transversely, or one-sixteenth the distance between centers of rivets in the direction of the stress.

Sect. 360. Stay-Plates

Stay-plates are to have not less than four rivets, and are to be spaced so that the ratio of length by the least radius of gyration of the parts connected does not exceed forty; the distance between the nearest rivets of two stay-plates shall in this case be considered as length.

Sect. 361. Length of Columns

Steel and wrought iron columns shall be made in one, two, or three story lengths, and the material shall be rolled in one length wherever practicable to avoid intermediate splices.

Sect. 362. Projecting Columns

Where any part of the section of a column projects beyond that of the column below, the difference shall be made up by filling plates secured to column by the proper number of rivets.

Sect. 363. Shoes—Concrete Filled Columns

Shoes of iron or steel, as prescribed for cast iron columns, or built shoes of plates and shapes may be used, complying with same requirements.

Nothing herein shall prohibit the use of wrought iron shell of standard thickness filled with concrete approved by the Inspector of Buildings.

Sect. 364. Cast Iron Columns—Length

Cast iron columns shall be of good workmanship and material and have a diameter of not less than five inches and a shell of a thickness of not less than three-quarters of an inch except that five-eighths of an inch may be used for light construction.

Nor shall they have an unsupported length of more than twenty times their least lateral dimension or diameter, except as stated in the tables of this Code, and except the same form part of a staircase, and also except in such specific cases as the Inspector of Buildings may specially allow a greater unsupported length.

The top and bottom flanges, seats, and lugs shall be of ample strength, reinforced by fillets and brackets; they shall be not less than one inch in thickness when finished.

All columns shall be faced at the ends to a plane surface at right angles to the axis of the column.

Sect. 365. Columns Placed Vertically to be Bolted Together

Where cast iron columns are placed vertically one on top of another, they shall be securely bolted together at the joints through flanges cast on the columns and a plate between the flanges. If the column is square or rectangular, the top flange shall project not less than two and one-half inches from the outer surfaces of the column on all sides, and the bottom flange of the column immediately above the same shall project as far as the top flange of the column below.

If the column is round or many sided, the top flange shall project not less than two and one-half inches at its least projection from the outer surface of the column, and be square or rectangular in shape, and the bottom flange of the column immediately above the same shall be of corresponding shape and project as far as the top flange of the column below. Each flange will be reinforced with a bracket placed centrally on the column and with fillets both on the bracket and flange.

In case the column is placed on the dividing line of the lot upon which the building is to be erected, the flanges on that side only may be omitted.

Sect. 366. Plates Between Columns Vertically Placed

Between the joints of cast iron columns placed vertically over each other there shall be in each case a solid cast iron plate not less than one and one-quarter inches in thickness, of the same dimensions as the flanges of the columns, and planed true on both sides, or a plate of mild-steel, not less than five-eighths of an inch thick, may be used instead of the cast iron plate.

The columns shall be bolted together with bolts not less than three-quarters of an inch in diameter passing through the two flanges and the intermediate plate, the bolts being of sufficient length to allow the nuts to be screwed up tightly, and as each column is placed in position, the bolts shall also be placed in ·osition and the nuts shall be tightly screwed up.

One bolt shall be placed at each corner of the plate and flanges, and the number of bolts shall never be less than four. The holes for these bolts shall be drilled to a template.

When cast iron columns are placed vertically one on top of the other, the diameters shall be increased not less than one inch for each two stories below the columns on the two stories above in the case of round columns, and in the case of square columns or rectangular columns, the same ratio of increase shall follow on at least two sides of the columns in each two stories below the uppermost two columns of the vertical line. This increase in size shall apply to interior as well as to exterior columns.

Sect. 367. Cores

The core of a column below a joint shall be not larger than the core of the column above and the metal shall be tapered down for a distance of not less than six inches.

Sect. 368. Core Shifted

Wherever the core of a cast iron column has shifted more than one-fourth the thickness of the shell, the strength shall be computed assuming the thickness of metal all around equal to the thinnest part, and the column shall be condemned and rejected if this computation shows the strength to be less than required by this Code.

Sect. 369. Blowholes

Wherever blowholes or imperfections are found in a cast iron column which reduces the area of the cross section at that point more than ten per cent, such column shall be condemned and rejected.

Sect. 370. Columns Bored for Inspection

Cast iron posts or columns not cast with one open side or back, before being set up in place, shall have a three-eighths of an inch hole drilled in the shaft of each post or column, by the manufacturer or contractor furnishing the same, to exhibit the thickness of the castings; and any other hole or holes of a similar size which the Inspector of Buildings may require, shall be drilled in the said posts or columns by the said manufacturer or contractor at their expense.

Sect. 371. Shoes and Plates

Iron or steel shoes or plates shall be used under the bottom tier of columns when necessary to properly distribute the load on the foundation.

Shoes shall be planed on top.

Sect. 372. Columns Supporting Walls

In all buildings hereafter erected or altered, where any iron or steel columns are used to support a wall or part thereof, whether the same be an exterior or interior wall, and columns located below the level of the sidewalk which are used to support exterior walls or arches over vaults, the said column or columns shall be either constructed double, that is, an outer and an inner column, the inner column alone to be of sufficient strength to sustain safely the weight to be imposed thereon, and the outer columns shall be one inch shorter than the inner columns or such other iron or steel column of sufficient strength and pro-

Sect. 376. Stiffeners

Stiffeners shall be provided over supports and under concentrated loads; they shall be of sufficient strength, as a column, to carry the loads, and shall be connected with a sufficient number of rivets to transmit the stresses into the web plate. Stiffeners shall fit so as to support the flanges of the girders. If the unsupported depth of the web plate exceeds sixty times its thickness, stiffeners shall be used at intervals not exceeding one hundred and twenty times the thickness of the web.

Sect. 377. Beams in Pairs

When rolled steel or wrought iron beams are used in pairs to form a girder, they shall be connected by bolts and iron separators at intervals of not more than five feet.

All beams twelve inches and over in depth shall have at least two bolts to each separator.

Sect. 378. Cast Iron Lintels

Cast iron lintels shall not be used for spans exceeding eight feet.

Cast iron lintels or beams shall be not less than three-quarters of an inch in any of their parts.

Sect. 379. Templates for Lintels

When the lintels or girders are supported at the ends by brick walls or piers, they shall rest upon cast iron or steel plates, or stone templates, of adequate strength, to properly distribute the load on the bearings.

In all cases the safe loads shall not exceed those fixed by this Code.

Sect. 380. Requirements for Beams

All rolled steel and wrought iron floor and roof beams used in buildings shall be of full weight, straight, and free from injurious defects.

Sect. 381. Tie Rods

Holes for tie rods shall be placed as near the thrust of the arch as practicable.

The distance between tie rods in floors shall not exceed eight feet, and shall not exceed eight times the depth of floor beams twelve inches and under.

Sect. 382. Channels—Bearing Plates

Channels or other shapes, where used as skewbacks, shall have a sufficient resisting moment to take up the thrust of the arch.

Bearing plates of metal or stone shall be used to reduce the pressure on the wall to the working stress.

Sect. 383. Beams on Girders to be Bolted—Anchors

Beams resting on girders shall be securely riveted or bolted to the same; where joined on a girder, tie straps of one-half inch net sectional area shall be used, with rivets or bolts to correspond.

Anchors shall be provided at the ends of all such beams bearing on walls.

Sect. 384. Templates for Beams

Under the ends of all iron or steel beams where they rest on the walls, cast iron or steel templates shall be built into the walls.

Templates under ends of steel or iron beams shall be of such dimensions as to bring no greater pressure upon the brickwork than that allowed in this Code.

When rolled iron or steel floor beams, not exceeding six inches in depth are placed not more than thirty inches on centers, no templates shall be required.

Granite or bluestone templates of not less than five inches in thickness may be substituted for iron or steel.

Sect. 385. Trimmer Beams—Iron Work Connected to Walls

All iron or steel trimmer beams, headers, and tail beams shall be suitably framed and connected.

The iron or steel girders, columns, beams, trusses, and all other iron work of all floors and roofs shall be strapped, bolted, anchored, and connected to the walls.

All beams framed into and supported by other beams or girders shall be connected thereto by angles or knees of a proper size and thickness, and have sufficient bolts or rivets in both legs of each connecting angle to transmit the entire weight or load coming on the beam to the supporting beam or girder.

In no case should the shearing value of the bolts or rivets or the bearing value of the connection angles, provided for in this Code, be exceeded.

Sect. 386. Rivet Holes

The distance from center of a rivet hole to the edge of the material shall not be less than:

[illegible] of an inch for [illegible] inch rivets.

⅞ of an inch for ⅝ inch rivets.
1⅛ inches for ¾ inch rivets.
1½ inches for 1 inch rivets.

Wherever possible, however, the distance shall be equal to two diameters.

Sect. 387. Rivets

All rivets, wherever practicable, shall be machine driven. The rivets in connections shall be proportioned and placed to suit the stresses. The pitch of rivets shall never be less than three diameters of the rivet, nor more than six inches. In the direction of the stress, it shall not exceed sixteen times the least thickness of the outside member. At right angles to the stress, it shall not exceed thirty-two times the least thickness of the outside member.

All holes shall be punched accurately, so that upon assembling a cold rivet will enter the hole without straining the material by drifting. Occasional slight errors shall be corrected by reaming.

The rivets shall fill the holes completely; the heads shall be hemispherical and concentric with the axis of the rivet.

Gussets shall be provided wherever required, of sufficient thickness and size to accommodate the number of rivets necessary to make a connection.

Sect. 388. Bolts When Used

Where riveting is not practicable or possible, connections may be effected by bolts. These bolts shall be of wrought iron or mild steel and they shall have the U. S. Standard threads. The threads shall be full and clean, the nuts shall be truly concentric with the bolt, and the thread shall be of sufficient length to allow the nut to be screwed up tightly.

Sect. 389. Washer for Bolts

When bolts go through bevel flanges, bevel washers to match shall be used so that head and nut of bolts are parallel.

Sect. 390. Bolts for Suspenders

When bolts are used for suspenders, the working stresses shall be reduced for wrought iron to ten thousand pounds and for steel to fourteen thousand pounds per square inch of net area, and the load shall be transmitted into the head or nut by strong washers distributing the pressure evenly over the entire surface of the same.

Sect. 391. Turned Bolts in Reamed Holes

Turned bolts in reamed holes shall be deemed a substitute for field rivets but the diametrical clearance shall not exceed one-sixty-fourth of an inch if turned bolts are used. Column connections and main girder connections shall be riveted.

Sect. 392. Trusses

Trusses shall be of such design that the stresses in each member can be calculated.

All trusses shall be held rigidly in position by efficient systems of lateral and sway bracing, struts being spaced so that the maximum limit of length to least radius of gyration, established by this Code, is not exceeded.

Any member of a truss subjected to transverse stress, in addition to direct tension or compression, shall have the stresses causing such strain added to the direct stresses coming on the member, and the total stresses thus formed shall in no case exceed the working stresses stated in this Code.

Sect. 393. Tension Members

For tension members, the actual net area only, after deducting rivet holes, one-eighth inch larger than the rivets, shall be considered as resisting the stress.

If tension members are made of angle irons riveted through one flange only, only that flange shall be considered in proportioning areas. Rivets shall be proportioned as prescribed in this Code.

Sect. 394. Web Members—How Connected

If the axis of two adjoining web members do not intersect within the line of the chords, sufficient area shall be added to the chord to take up the bending strains, or the web members shall be connected by plates so arranged that the axis of the web members prolonged will intersect on the axis of the chord.

Sect. 395. Bolts Prohibited—When

No bolts shall be used in the connections of riveted trusses, excepting when riveting is impracticable, and then the holes shall be drilled or reamed.

Sect. 396. Pins

The bending stresses on pins shall be limited to twenty thousand pounds for steel and fifteen thousand for wrought iron.

Sect. 397. Pin-Connected Trusses

All compression members in pin-connected trusses shall be proportioned, using seventy-five per cent of the permissible working stresses for columns. The heads of all eye-bars shall be made by upsetting or forging. No weld will be allowed in the body of the bar. Steel eye-bars shall be annealed. Bars shall be straight before boring.

Sect. 398. Pin Holes

All pin-holes shall be bored true, and at right angles to the axis of the members, and must fit the pin within one-thirty-second of an inch. The distances of pin-holes from center to center for corresponding members shall be alike, so that, when piled upon one another, pins will pass through both ends without forcing.

Sect. 399. Eyes and Screw Ends

Eyes and screw ends shall be proportioned so that upon test to destruction fracture will take place in the body of the member.

Sect. 400. Pin Plates

Pin-plates shall be provided wherever necessary to reduce the stresses on pins to the working stresses prescribed in this Code. These pin-plates shall be connected to the members by rivets of sufficient size and number to transmit the stresses without exceeding working stresses.

Sect. 401. Pins—Used When

The main connections of members shall be made by pins. Other connections may be made by bolts. All pins shall be accurately turned.

If there is a combination of riveted and pin-connected members in one truss, these members shall comply with the requirements for pin-connected trusses; but the riveting shall comply with the requirements of this Code.

Sect. 402. Metal Plates Backed Up

All cast iron or metal plates of fronts shall be backed up or filled in with masonry of the thicknesses provided for walls and piers in this Code.

Sect. 403. Metal Painted—Inspected First.

Where surfaces in riveted work come in contact with each other, they shall be painted before assembling.

Paint shall not be required for metal structural work which is to be thoroughly imbedded in concrete or cement grout applied directly against the metal, except where surfaces in riveted work come in contact with each other.

All metal structural work that is not to be thoroughly imbedded in concrete or cement grout shall be cleaned of all scales, dust, dirt, and rust, and thoroughly coated with at least one coat of suitable paint; after erection all such work shall be painted at least one additional coat.

Cast iron columns shall not be painted or covered until after inspection by the Inspector of Buildings.

Sect. 404. Metal Under Water

All iron or steel used under water shall be inclosed with concrete.

TITLE XX

CONCRETE BLOCKS

Sect. 405. Use of Concrete Blocks

Hollow concrete building blocks may be used for buildings three stories or less in height where said use is approved by the Inspector of Buildings; provided, however, that such blocks shall be composed of at least one part of Standard Portland Cement, and not to exceed five parts of clean, coarse, sharp sand or gravel, or a mixture of at least one part of Portland cement to five parts of crushed rock or other suitable aggregate. Provided, further, that this section shall not permit the use of hollow blocks in party walls. Said party walls must be built solid.

Sect, 406. Material

All material shall be of such fineness as to pass a one-half inch ring and be free from dirt or foreign matter. The material composing such blocks shall be properly mixed and manipulated, and the hollow space in said blocks shall not exceed the percentage given in the following table for different height walls, and in no case shall the walls or webs of the block be less in thickness than one-fourth of the height. The figures given in the table represent the percentage of such hollow space for different height walls.

Stories	1st	2nd	3rd
1 and 2	33	33	
3	25	33	33

Sect. 407. Thickness of Walls

The thickness of walls for any building where any concrete blocks are used shall not be less than is required by this Code for Brick Walls. (Hollow space not included in the thickness.)

Sect. 408. Hollow Block Facing Bonded to Backing

Where the face only is of hollow concrete building blocks, and the backing is of brick, the facing of hollow concrete blocks must be strongly bonded to the brick either with headers projecting four inches into the brickwork, every fourth course being a heading course, or with approved ties; no brick backing shall be less than eight inches. Where the walls are made entirely of hollow concrete blocks, but where said blocks have not the same width as the wall, every fifth course shall extend through the wall forming a secure bond. All walls, where blocks are used, shall be laid up in Portland cement mortar; two parts sand, one part Portland cement.

Sect. 409. Age Before Using

All hollow concrete building blocks, before being used in the construction of any building in the city of Manchester, shall have attained the age of at least four weeks.

Sect. 410. Blocks Made Solid—When

Wherever girders or joists rest upon walls so that there is a concentrated load on the block of over one ton, the blocks supporting the girder or joists must be made solid. Where such concentrated load shall exceed three tons, the blocks for two courses below and for a distance extending at least eighteen inches each side of said girder, shall be made solid. Where the load on the wall from the girder exceeds five tons, the blocks for three courses beneath it shall be made solid with similar material as in the blocks. Wherever walls are decreased in thickness, the top course of the thicker shall be solid.

Sect. 411. Loads on Hollow Blocks—Crushing Strength

Provided, always, that no wall, or any part thereof, composed of hollow concrete blocks shall be loaded to an excess of eight tons per superficial foot of the area of such blocks, including the weight of the wall, and no blocks shall be used that have an average crushing strength of less than one thousand pounds per square inch of area at the age of twenty-eight days; no deduction shall be made in figuring the area for the hollow spaces.

No block shall have an average crushing strength of less than fifteen hundred pounds per square inch when tested at twenty-eight days, where the strength is figured on the effective net section.

Sect. 412. Piers Solid—When

All piers and buttresses that support loads in excess of five tons, shall be built of solid concrete blocks for such distance below as may be required by the Inspector of Buildings. Concrete lintels and sills shall be reinforced by iron or steel rods in a manner satisfactory to the Inspector of Buildings, and any lintels spanning over four feet six inches in the clear shall rest on solid concrete blocks.

Sect. 413. Blocks to be Tested

Provided, that no hollow concrete blocks shall be used in the construction of any building in the city of Manchester unless the maker of said blocks has submitted the product to the full test required by this Code, and placed on file with the Inspector of Buildings a certificate from a reliable testing laboratory showing that samples from the lot of blocks to be used have successfully passed the requirements of this Code and filing a full copy of the test with the Inspector of Buildings.

Sect. 414. Identification Mark

A brand or mark of identification must be impressed in, or otherwise permanently attached to, each block for purpose of identification.

Sect. 415. Tests Every Six Months

No certificate of approval shall be considered in force for more than six months, unless there be filed with the Inspector of Buildings, in the city of Manchester, at least once every six months following, a certificate from some reliable physical testing laboratory, showing that the average for five specimens tested for compression, and five specimens tested for transverse strength comply with the requirements of the Building Code of the city of Manchester; samples shall be selected by the Building Inspector or by the laboratory, from blocks actually going into construction work. Samples must not be furnished by the contractors or builders.

Sect. 416. Inspector May Require Tests Any Time

The manufacturer and user of any such hollow concrete blocks, as are mentioned in this regulation, or either of them shall, at any and all times, have made such tests of the cements used in making such blocks, or such further tests of the completed block, or of each of these, at their own expense, and under the supervision of the Inspector of Buildings as the said Inspector shall require.

Sect. 417. Portland Cement Used

The cement used in making the said blocks shall be Portland cement, and must be capable of passing the minimum requirements as set forth in the "Standard Specifications for Cement" by the American Society for Testing Materials.

Sect. 418. Blocks Condemned—When

Any and all blocks, samples of which on being tested under the direction of the Inspector of Buildings, fail to stand at twenty-eight days the tests required by these regulations, shall be plainly marked with oil paint by the manufacturer or user and shall not be used in the construction of any building within the city of Manchester.

Sect. 419. Blocks Inspected Before Using

No concrete blocks shall be used in the construction of any building within the city of Manchester until they have been inspected, and average samples of the lot tested, approved and accepted by the Inspector of Buildings.

Sect. 420. Regulations Apply to New Materials.

These regulations shall apply to all such new materials as are used in building construction, in the same manner and for the same purposes, as stone, brick, and concrete are now authorized by the Building Code, when said new material to be substituted departs from the general shape and dimensions of ordinary building brick, and more particularly to that form of building material known as "Hollow Concrete Block" manufactured from cement and a certain addition of sand, crushed stone, or similar material.

Sect. 421. Application for Use of New Materials

Before any such material is used in buildings, an application for its use and for a test of the same must be filed with the Inspector of Buildings. A description of the material and a brief outline of its manufacture and proportions of the materials must be embodied in the application.

Sect. 422. Kinds and Costs of Tests

The material must be subjected to the following tests: Transverse, Compression, Absorption, Freezing and Fire. Additional tests may be called for when in the judgment of the Inspector of Buildings, the same may be necessary. All such tests must be made in some laboratory of recognized standing, under the supervision of the Inspector of Buildings.

The tests shall be made at the expense of the applicant; provided, however, if the blocks successfully withstand the tests, the costs of the tests shall be paid by the city of Manchester.

Sect. 423. Result of Tests Filed

The results of the tests, whether satisfactory or not, must be filed with the Inspector of Buildings. They shall be open to inspection upon application to the Inspector of Buildings.

Sect. 424. Number of Samples for Tests

For the purposes of the tests, at least twelve samples or test pieces must be provided. Such samples must represent the ordinary commercial product. They shall be selected from stock by the Inspector of Buildings or shall be made in his presence, at his discretion. The samples must be of the regular size and shape used in construction.

In cases where the material is made and used in special shapes and forms too heavy for testing in the ordinary machines, smaller sized specimens shall be used as shall be directed by the Inspector of Buildings to determine the physical characteristic specified in this chapter.

t. 425. When Tested

he samples may be tested as soon as desired by applicant, but in no case later than sixty days ter manufacture.

ct. 426. Weight.

The weight per cubic foot of the material must be termined.

ect. 427. Tests in Series of Five

Tests shall be made in series of at least three, ex-ept that in the fire tests a series of two is sufficient.

Transverse tests shall be made on full sized samples. Half samples may be used for the crushing, freezing, and fire tests. The remaining samples shall be kept in reserve, in case unusual flaws or exceptional or abnormal conditions make it necessary to discard certain of the tests. All samples must be marked for identification and comparison.

Sect. 428. Transverse Tests

The Transverse test shall be made as follows: The samples shall be placed flatwise on two rounded knife edge bearings set parallel seven inches apart. A load is then applied on top, midway between the supports, and transmitted through a similar rounded knife edge, until the sample is ruptured. The modulus of rupture shall then be determined by multiplying the total breaking load in pounds by twenty-one (three times the distance between supports in inches) and then dividing the result thus obtained by twice the product of the width in inches by the square of the depth in inches. R equals 3 w 1 divided by 2 b d2. No allowance should be made in figuring the modulus of rupture for the hollow spaces. Modulus of rupture for concrete blocks at 28 days must average 100.

Sect. 429. Compression Test

The compression test shall be made as follows: Samples must be cut from blocks so as to contain a full web section. The sample must be carefully measured, then bedded flatwise in plaster of Paris to secure a uniform bearing in the testing machine, and crushed. The total breaking load is then divided by the area in compression in square inches. No deduction shall be made for hollow spaces; the area will be considered as the product of the width by the length.

Sect. 430. Absorption Test.

The absorption test must be made as follows: The sample is first thoroughly dried to a constant weight. The weight must be carefully recorded. It is then placed in a pan or tray of water, face downward, immersing it to a depth of not more than one half inch. It is again carefully weighed at the following periods: thirty minutes, four hours, and forty-eight hours, respectively, from the time of immersion, being replaced in the water in each case as soon as the weight is taken. Its compressive strength, while still wet, is then determined at the end of forty-eight hours' period, in the manner specified in the preceeding section.

Sect. 431. Freezing Test.

The freezing test is made as follows: The sample is immersed, as described in the preceeding section, for at least four hours, and then weighed. It is then placed in a freezing mixture or a refrigerator, or otherwise subjected to a temperture of less than fifteen degrees Fahrenheit, for at least twelve hours. It is then removed and placed in water, where it must remain for at least one hour, the temperature of which is at least 150 degrees Fahrenheit. This operation is repeated ten times, after which the sample is again weighed while still wet from the last thawing. Its crushing strength should then be determined as called for in section 429 on compression test.

Sect. 432. Fire Test.

The fire test must be made as follows: Two samples are placed in a cold furnace in which the temperature is gradually raised to 1,700 degrees Fahrenheit. The test must be subjected to this temperature for at least thirty minutes. One of the samples is then plunged in cold water (about fifty degrees to sixty degrees Fahrenheit) and the results noted. The second sample is permitted to cool gradually in air, and the results noted.

Sect. 433. Loss in Freezing and Fire Tests

The freezing and thawing process, must not cause a loss in weight greater than ten per cent, nor a loss in strength of more than thirty-three and one-third per cent; except that when the lower figure is above one thousand pounds per square inch, the loss in strength may be neglected. The fire test must not cause the material to disintegrate.

Sect. 434. Materials When Approved

The approval of any material is given only under the following conditions:

(a) A brand or mark for identification must be impressed on, or otherwise attached to, the material.

(b) A plant for the production of the material must be in full operation when the official tests are made.

(c) The name of the firm or corporation and the responsible officers must be placed on file with the Inspector of Buildings and changes in same promptly reported.

(d) The Inspector of Buildings shall require full tests to be repeated on samples selected from the open market when, in his opinion, there is any doubt as to whether the product is up the standard of these regulations, and the manufacturer must submit to the Inspector of Buildings once in at least every six months, a certificate of tests showing that the average resistance of three specimens to cross breaking and crushing are not below the requirements of these regulations. Such tests must be made by some laboratory of recognized standing on samples selected either by the Inspector of Buildings, or the laboratory, from material actually going into construction, and not on those furnished by the manufacturer.

(e) In case the results of tests made under this condition (d) should show that the standard of these regulations is not maintained, the approval of said Inspector to the manufacture of said blocks will at once be suspended or revoked.

TITLE XXI

HOISTWAYS, ELEVATORS, AND WELL HOLES

Sect. 435. Well Holes, Etc., to be Guarded

Every hoistway, hatchway, stairway, or well hole in every building shall hereafter be securely guarded by means of proper gates, railings, or guards, or other inclosures, which may be approved by the Inspector of Buildings.

Such guards or railings shall not be less than three feet in height nor the lower rail more than one foot above the floor, and shall be so constructed as to effectually prevent persons from falling into such hoistways, hatchways, stairways or well holes. The rs, lessees, or occupants of any building in the Manchester, in which hatchways or well holes exist, or shall hereafter be constructed, shall cause the same to be effectually barred, or inclosed, for the prevention of accidents therefrom.

It shall be the duty of the Inspector of Buildings to notify such persons mentioned in the preceding section who have hatchways or well holes in their buildings, to have the same properly guarded or inclosed.

Sect. 436. Openings in Fireproof Wall

In every building hereafter erected or altered to be used for manufacturing or mercantile purposes, in which there shall be hoistways, elevators, or well holes, not inclosed in walls, constructed of brick or other fireproof materials and provided with fire doors, the openings thereof through and upon each floor of said buildings shall be provided with approved automatically closing, metal clad, hatch doors for every hoistway, elevator or well hole. Outside windows or openings into every elevator shaft or hoistway shall have such sign or device to indicate the existence of said shaft or hoistway as shall be approved by the Inspector of Buildings.

Sect. 437. Elevator Shafts Inclosed

Elevator shafts in all mercantile and manufacturing buildings, exceeding three stories in height, hereafter built or altered, shall be inclosed with walls or partitions of approved fireproof material, and have automatically closing metal clad doors at all openings thereto.

Sect. 438. Adjoining Stairway Inclosed

In all buildings hereafter erected or altered, wherever elevators are placed in the well holes of or adjacent to stairways, such elevators and stairways shall be inclosed with partitions of approved fireproof materials.

Sect. 439. Grating in Elevator Shafts

There shall be placed below the machinery and sheaves at the top of every elevator shaft, hereafter constructed or altered, a substantial grating or screen of iron, so constructed as to prevent persons or objects from falling into such shafts, and sufficiently open to permit flames and smoke to pass through to the skylight or windows. If such shaft shall be floored over with a solid flooring, such flooring shall not cover more than one-half of the area of such shaft, and at least one-half of the area of such shaft shall be covered with an approved open grating.

Sect. 440. Skylights

In all buildings hereafter erected or altered, the roof immediately over hoistway, elevator, stair, open shaft or well hole, shall be provided with a skylight containing not less than twenty square feet of glass; said glass shall be set in metal sashes or frames, in lights of not less than two hundred square inches each, and shall not exceed one-eighth inch in thickness. There shall be suspended immediately above and below this glass a strong wire netting. Provided, that if in the sides of an elevator pent house, or at the top of any such shaft or well hole, there be windows having thirty-five square feet of glass of the thickness herein specified for skylights, then the Inspector of Buildings may, at his discretion, permit the skylights above described to be omitted.

TITLE XXII

STAIRWAYS AND DOORS

Sect. 441. Stair Halls

All non-fireproof buildings, in which, above the first floor there is to be, or in which provision is made for an occupation for the same at times by fifty to one hundred or more persons employed, engaged, transcient, or guests therein, there shall be at least two stair halls, each not less than three feet six inches wide.

The width of the stairs shall be increased six inches for each increment of fifty persons or part thereof over one hundred up to three hundred or when five feet is reached. If the number of persons so occupying such premises exceed six hundred, three stairs, five feet in width each, shall be constructed.

In all cases, the stairs shall be located at as great a distance as practicable from each other, and in cases where the persons so occupying such buildings are not all on one floor, the widths and number of stairways in the several stories shall be governed as above by the total number of persons who will at any time be on any floor. All persons above any given story shall be counted in addition to the persons on that story.

Sect. 442. Lot Area—Stairs Required

Irrespective of the number of persons occupying public buildings covering a lot area exceeding five thousand square feet, and not exceeding seventy-five hundred square feet, there shall be provided at least two continuous lines of stairs, and every such building shall have at least one continuous line of stairs, for each five thousand square feet of lot area covered or part thereof, in excess of that required for seventy-five hundred square feet of lot area.

When any such building covers an area of lot greater than fifteen thousand square feet the number of stairs shall be increased proportionately. For fireproof buildings, one less flight of stairs than above called for shall be required in each case, unless the floor area exceeds seventy-five hundred square feet in which case there shall not be less than two stairs.

Sect. 443. Stairs in Tenement Houses

Every tenement or building, occupied by three or more families, shall have at least two flights of stairs, not less than three feet in width in the clear, which shall extend from the entrance floor to the top story, and every apartment shall be directly accessible from an entrance hall by means of at least one such flight of stairs.

If there are more than sixteen rooms above the second floor, exclusive of bath and toilet rooms, the width of the hallways and stairs shall be increased six inches for every additional sixteen rooms or fraction thereof, up to eighty rooms, or until the width of five feet is reached.

Sect. 444. Stairways in School Buildings

School buildings, if more than one story in height and having more than three rooms above the first story, shall have at least two separate and distinct stairways, as far remote from each other as practicable. School buildings or all buildings containing a general assembly room shall have stairs and fire escapes proportioned as prescribed for Assembly Halls.

Sect. 445. Assembly Halls

Every hall seating one hundred persons and not more than six hundred persons, shall have at least two separate and distinct stairways for ingress and egress, the same to be placed as far apart as possible.

Every hall seating more than six hundred persons and not more than twelve hundred persons, shall have at least three separate and distinct stairways.

All stairs for ingress and egress leading to any assembly hall or halls, shall be at least four feet wide and provided with hand rail on each side. The rise of the stairs shall not be more than seven and one-half inches to each step and the tread not less than ten and one-half inches.

Sect. 446. Stairs Inclosed

Stairways and stair halls of any building three or more stories in height, the stories of which are used for different grades of occupancy, shall be inclosed by fireproof walls or semi-combustible partitions as the Inspector may direct said walls or partitions shall have all openings closed with fireproof doors and shall extend from cellar floor to the underside of roof boarding of pitched roofs, and three feet above flat roofs, and covered with a skylight as prescribed for "stair halls."

Sect. 447. Fire Escapes

In addition to the above described stairways, assembly halls shall be provided with fire escapes as provided by law, provided that in assembly halls having greater seating capacity than seven hundred and fifty the aggregate width of such emergency exits which shall be provided for each floor, balcony and gallery of such building, shall be one-half of that provided for the main exits, and no emergency exit, door, or stairway shall be less than three feet in width.

Sect. 448. Lights Denoting Exits

The location of fire escapes in all buildings shall be conspicuously placarded during the daytime, and all hotels, factories, workshops, schools, detention buildings, assembly halls and theatres and all other buildings requiring fire escapes, which are occupied at night, shall have all public halls, stairways and passageways properly lighted, and at the head and foot of each flight of stairs, and at the intersection of public and private halls with main corridors, and at the point of egress to each fire escape shall be kept during the night a red light; and there shall be kept posted in a conspicuous place in every sleeping room a notice descriptive of such means of escape.

Sect. 449. Standard Fire Escape

The fire escape to be of iron or steel, with balconies at each story above the first, and in no case the balconies to be more than nine inches below the top of the door or window sills with which they connect. Wherever circumstances will permit, the stairs to be on the outside of the balconies, with equal width passageway next to the building and a three inch hand space between the same.

The brackets to be not more than four feet apart. The top member of main brackets to be two and one-half inches by three inches T, with one inch bolt extending through the wall, with nut and not less than five inch washer inside; the brace to be one inch round or square, or two and one-half inches by two and one-half inches T, securely bolted or riveted at top and entering the wall at least four inches at bottom, with a shoulder resting on a heavy washer. The brackets in passageways to be similar, with a one inch bolt passing through the wall with nut not less than five inch washer inside or their approved equivalent.

The floors of the balconies to be one and one-fourth inches by one-quarter inch bars, set on edge, one and one-half inches on centers stayed by separator bolts at least every two feet and securely bolted to brackets. Extra bearing pieces to be put in wherever circumstances require.

The stairs, when practicable, to have an incline not greater than forty-five degrees. The stringers to be not less than five inches by three-eighths of an inch in size, well secured to the brackets at top and bottom, provided with suitable angles or brackets to support the treads, and properly braced. The treads to be one and one-quarter inches by one-quarter of an inch bars, set on edge, with two separator bolts, not less than seven and one-half inches wide, and securely bolted in place. The rise not to exceed nine inches. The stairs must in all cases descend to the ground, except where the fire escape projects over a highway or driveway; the lower balcony may connect with approved cantelever stairs, or folding ladder, when approved by the Inspector.

The balustrades or balconies and each side of stairs to have hand rail one and one-half inches by three-eighth inch in size, set flatwise, or one and one-quarter by one and one-quarter inches angle, not less than three feet in height above the floor or front of treads, and well secured to walls and posts. The filling to be five-eighths inch round or square uprights not more than eight inches apart, or any approved flat, cross or fancy work equivalent. The balustrades to be well braced at least every six feet.

All fire escapes to be painted two coats, the first coat to be pure red lead and linseed oil. The second coat not to be put on until after the work has been inspected and approved by the Inspector of Buildings.

All materials used to be the best of their several kinds, and all the work to be done in the most workmanlike manner. Wherever deemed necessary the walls to be reinforced as the Inspector directs.

Plans and specifications for all fire escapes to be built or constructed in the City of Manchester shall be submitted and approved by the Inspector of Buildings before such construction shall have begun.

Sect. 450. Width of Outside Doors

The aggregate width of doors opening at the street level, for halls rented or used for public assemblies of any kind, for school houses, orphan asylums, insane asylums, reformatories of any kind, shall be at least equal to the aggregate width of stairways; extra width shall be added to accommodate occupants of first floor, and such doors shall not be locked during business hours, or while such buildings are occupied by large numbers of people, and all such doors shall open outwardly.

Sect. 451. Doors Open Outward

The outside doors of all assembly halls, theatres, churches, schools, factories, and other buildings occupied by large number of people shall be made to open outward.

TITLE XXIII

PUBLIC BUILDINGS, THEATRES, AND PLACES OF ASSEMBLAGE

Sect. 452. General Statement.

In all public buildings, or buildings of a public character, such as hotels, churches, theatres, restaurants, railroad depots, public halls, and other buildings used or intended to be used for purposes of public assemblage, amusement, or instruction, and including department stores, and other business and manufacturing buildings where large numbers of people are congregated, the halls, doors, stairways, seats, passageways and aisles, and all lighting and heating appliances and apparatus shall be arranged as the Inspector of Buildings shall direct to facilitate egress in cases of fire or accident, and to afford the requisite and proper accommodation for the public protection in such cases.

Sect. 453. Aisles to be Unobstructed

All aisles and passageways in said buildings shall be kept free from camp-stools, chairs, benches, and other obstructions, and no person other than an employe or policeman or fireman shall be allowed to stand in or occupy any of said aisles or passageways, during any performance, service, exhibition, lecture, concert, ball, or any public assemblage.

Sect. 454. Inspector May Make Orders

The Inspector of Buildings shall at any time serve a written or printed notice upon the owner, lessee, or manager of any of said buildings, directing any act or thing to be done or provided in or about the said buildings and the several appliances therewith connected, such as halls, doors, stairs, windows, seats, aisles, fire-walls, fire apparatus, and fire escapes as he may deem necessary.

Nothing herein contained shall be construed to authorize or require any other alterations to theatres existing prior to the date of this Code than are specified in this Title.

Sect. 455. Buildings Subject to Provisions.

Every theatre or opera house, or other building intended to be used for theatrical or entertainment purposes, or for public resort, or entertainments of any kind, hereafter erected, for the accommodation of more than three hundred persons, shall be built to comply with the requirements of this Title.

No building, which at the time of the passage of this Code, is not in actual use for theatrical or entertainment purposes, and no building hereafter erected, not in conformity with the requirements of this Title, shall be used for theatrical or operatic purposes, or for public entertainments of any kind, until the same shall have been made to conform with the requirements of this Title.

Sect. 456. Buildings to be Approved

No building hereinbefore described shall be opened to the public for theatrical or entertainment purposes, or for public entertainments of any kind, until the Inspector of Buildings shall have approved the same in writing as conforming to the requirements of this Title, nor until the Chief of the Fire Department shall have certified in writing that all the appliances for the extinguishing of fire or guarding against the same conform to this Code and to the special requirements of this Title and are in a complete and satisfactory working condition.

Every such building shall have at least one front on the street, and in such front there shall be suitable means of entrance and exit for the audience.

In addition to the aforesaid entrances and exits on the street, there shall be reserved for service in case of an emergency an open court or space on the side not bordering on the street, where said building is located on a corner lot; and on both sides of said building, where there is but one frontage on the street. The width of such open court or courts shall not be less than eight feet where the seating capacity does not exceed one thousand people, exceeding one thousand and not more than eighteen hundred people, nine feet in width; and exceeding eighteen hundred people ten feet in width. Said open court or courts shall begin on a line with or near the proscenium wall and shall extend the length of the auditorium proper, to or near the wall separating the same from the entrance lobby or vestibule.

Sect. 457. Corridors From Courts

A separate and distinct corridor shall continue to the street, from each open court, through such superstructure as may be built on the street side of the auditorium, with continuous walls of brick or fireproof materials on each side the entire length of said corridor or corridors, and the ceiling and floors shall be fireproof.

Said corridor or corridors shall not be reduced in width to more than two feet less than the width of the open court or courts, and there shall be no projection in the same; the outer opening shall be provided with doors or gates opening toward the street. During the performance the doors or gates in the corridors shall be kept open by proper fastenings; at other times, they may be closed and fastened by movable bolts or latches.

The said open courts and corridors shall not be used for storage purposes, or for any purpose whatsoever except for exit and entrance from and to the auditorium and stage, and must be kept free and clear during performances.

The level of said corridors shall be graded to the sidewalk and made flush therewith at all points at the street entrances.

Sect. 458. Main Entrance—Gradients to be Used

The entrance of the main front of the building shall not be on a higher level from the sidewalk than four steps, but this shall not preclude the use of an additional number of steps at the street entrances to the sides or rear of the building, as may be necessary to overcome the difference in grades of sidewalks.

To overcome any difference of level in and between courts, corridors, lobbies, passages, and aisles on the ground floor, gradients shall be employed of not over one foot in twelve feet with no perpendicular risers.

Sect. 459. Exits Into Courts—Width

From the auditorium opening into the said open courts, or on the side street, there shall be not less than two exits on each side in each tier from and including the parquet and each and every gallery.

Each exit shall be at least five feet in width in the clear and provided with fire-doors constructed as hereinbefore in this Code described for fireproof doors. All of said doors shall open outwardly, and shall be fastened with movable bolts, the bolt to be kept drawn during performances.

Sect. 460. Balconies In Courts—Staircase

There shall be balconies not less than three feet in width in the said open court or courts at each level or tier above the parquet, on each side of the auditorium, of sufficient length to embrace the two exits, and from said balconies there shall be staircases extending to the ground level, with a rise of not over eight and one-half inches to a step and not less than a nine inch tread exclusive of the nosing.

The staircase from the upper balcony to the next below shall be not less than thirty inches in width in the clear, and from the first balcony to the ground, three feet in width in the clear, where the seating capacity of the auditorium is for one thousand people or less, three feet six inches in the clear where exceeding one thousand and not more than eighteen hundred, four feet in the clear where exceeding eighteen hundred people.

Sect. 461. Construction of Balconies and Staircases

All the before mentioned balconies and staircases shall be constructed of wrought iron or steel throughout, except that the treads may be of cast iron, and be of ample strength to sustain the load to be carried by them, and they shall be covered with a metal hood or awning, to be constructed in such manner as shall be approved by the Inspector of Buildings, and such staircases shall have a strong rail on each side.

Where one side of the building borders on a street, there shall be balconies and staircases of like capacity and kind, as before mentioned, carried to the ground.

Sect. 462. Uses of Other Portions of Building

Vhen located on a corner lot, that portion of the
mises bordering on the side street and not required
the uses of the theatre may, if such portion be of
proof construction, and not more than twenty-five
t average width, be used for offices, stores, or
rtments, providing the walls separating this por-
from the theatre proper are carried up solidly to
through the roof, and that an exit is provided for
theatre, on each tier equal to the combined width
xit openings on opposite sides in each tier, com-
nicating with balconies and staircases leading to
street in a manner provided elsewhere in this
le.

Sect. 463. Uses of Space Above—Restrictions

Nothing herein contained shall prevent a roof garden, art gallery, or rooms for similar purposes being placed above a theatre or public building, providing the floor of the same forming the roof over such theatre or building shall be constructed of iron or steel and fireproof materials, and that said floor shall have no covering boards or sleepers of wood, but be of tile or cement. Every roof over said garden or room shall have all supports or rafters of iron or steel, and be covered with glass or fireproof materials, or both, but no such roof garden, art gallery, or room for any public purpose shall be placed over or above that portion of any theatre or other building which is used as a stage. Requirements for exits shall be the same as for theatres.

No workshop, storage, or general property room shall be allowed above the auditorium or stage, or under the same, or in any of the fly-galleries, unless all of such rooms or shops are located in the rear of or at the side of the stage, and in such cases they shall be separated from the stage by a brick wall not less than twelve inches in thickness, and the openings leading into said portions shall have self-closing standard fire-doors.

No portion of any building hereafter erected or altered, used or intended to be used for theatrical or other purposes as in this Title specified, shall be occupied or used as a dwelling, hotel, lodging house, factory, workshop, or manufactory, or for stage purposes except as may be hereafter specially provided for. Said restriction relates not only to that portion of the building which contains the auditorium and the stage, but also applies to the entire structure in conjunction therewith.

No store or room contained in the building, or the offices, stores, or apartments adjoining, as aforesaid, shall be let or used for carrying on any business dealing in any highly inflammable article or material, except under such conditions as may be prescribed by the Inspector of Buildings under authority of a written permit issued by said Inspector, or for manufacturing purposes.

No lodging accommodations shall be allowed in any part of the building communicating with the auditorium or stage.

Sect. 464. Fireproof Interior Walls

Interior walls built of fireproof materials shall separate the auditorium from the entrance vestibule, and from any room or rooms, over the same, also from any lobbies, corridors, refreshment, or other rooms, and in all such walls the window and door frames and all sash and doors shall be fireproof; the window frames and sash shall be of metal of standard construction, and the sash made stationary and glazed with wire glass not less than one-quarter inch in thickness, and each pane or unit measuring not more than twenty-four by thirty inches; the doors shall be made to close automatically and be of standard pattern and make in every respect.

Sect. 465. Staircases to be Inclosed—Width of Openings

All staircases for the use of the audience shall be inclosed with walls of brick or of fireproof materials approved by the Inspector of Buildings, in the stories through which they pass, and the openings to said staircases from each tier shall be the full width of staircases. No door shall open immediately upon a flight of stairs, but a landing at least the width of the stairs shall be provided between such stairs and such door, and the swing of the door shall in no way decrease the width or otherwise interfere with an exit.

Sect. 466. Fire Wall Between Stage and Auditorium

A fire-wall, built of brick, not less than twelve inches in any portion of same, shall separate the auditorium from the stage, and the same shall extend at least four feet above the stage roof, or the auditorium roof, if the latter be the higher, and shall be coped.

Sect. 467. Proscenium Opening—How Constructed

Above the proscenium opening there shall be an iron girder of sufficient strength to safely support the load above, and the same shall be covered with fireproof material not less than four inches in thickness.

Should there be constructed an orchestra over the stage, above the proscenium opening, the said orchestra shall be placed on the auditorium side of the proscenium fire-wall, and shall be entered only from the auditorium side of said wall.

The molded frame around the proscenium opening shall be formed entirely of fireproof materials; if metal be used, the metal shall be filled in solid with noncombustible material and securely anchored to the wall with iron.

Sect, 468. Proscenium Curtain—How Suspended—Used—Weight Overcome

The proscenium opening shall be provided with a fireproof metal curtain, or a curtain of asbestos, or other fireproof material approved by the Inspector of Buildings, overlapping the brick proscenium wall at each side not less than twelve inches, and sliding vertically at each side with iron grooves or channels to a depth of not less than twelve inches. Said grooves or channels shall be securely bolted to the brick wall and extend to a height of not less than three feet above the top of the curtain when raised to its full limit.

Said curtain shall be suspended or hung by steel cables passing over wrought iron or steel sheaves supported by wrought iron brackets of sufficient strength and well-braced; the brackets shall be securely attached to the proscenium wall by through bolts with nuts and washers on the opposite side of the wall.

Said fireproof curtain shall be raised at the commencement of each performance, lowered after each act, and lowered at the close of said performance and be operated by approved machinery for that purpose.

If the proscenium curtain be of asbestos, that material shall be reinforced with wire or wire spun in the asbestos, and at the bottom of the curtain shall be placed a rigid metallic rod or bar of proper weight, securely fastened to the curtain and covered over with like material as the curtain itself, to carry down the curtain by the weight of the said rod or bar when released.

The excess weight of the curtain shall be overcome by a check rope of cotton or hemp, extending to the floor on both sides of the stage, so that the cutting or burning of said rope will release the curtain and the same will then descend at its normal rate of speed. The proscenium curtain shall be placed at the nearest point at least three feet distant from the foot-lights.

Sect. 469. Openings Through Proscenium Wall

No doorway or opening through the proscenium wall, from the auditorium, shall be allowed above the level of the first floor, and such first floor openings shall have self-closing standard fire-doors at each side of the wall, and openings, if any, below the stage shall each have a self-closing standard fire-door, and all of the said doors shall be hung so as to be opened from either side of the wall at all times.

Sect. 470. Skylights Over Stage—Wire Netting

There shall be provided over the stage metal skylights of an area or combined area at least one-twelfth of the total area of said stage, fitted with sash made to open and glazed with glass not exceeding one-eighth of an inch thick, and each pane thereof measuring not less than three hundred square inches.

The whole of said skylight shall be so constructed as to open instantly on the cutting or burning of a hempen cord, which shall be arranged to hold skylight closed. Immediately underneath the glass of said skylights, there shall be wire netting, but wire glass shall not be used in lieu of this requirement.

Sect. 471. Roof Over Stage—Construction

The roof over the stage shall be provided with a shaft of galvanized iron extending from the ceiling line up through and at least four feet above the roof and have a raised cover at the top for the escape of smoke. The least inside diameter, or the least horizontal measurement, if the shaft be of other shape than circular, shall be forty-eight inches. At the bottom of this shaft, on a plane with the ceiling, shall be a galvanized sheet iron door in two parts, each part separately hinged and kept closed by fusible links, so that in case of fire the doors will instantly open downward by their own weight.

Sect. 472. Stage Construction

All that portion of the stage not comprised in the working of scenery, traps, and other mechanical apparatus, for the presentation of a scene, usually equal to the width of the proscenium opening, shall be built of iron or steel beams filled in between with fireproof material, and all girders for the support of said beams shall be of wrought iron or rolled steel.

Sect. 473. Fly and Tie Galleries

The fly-galleries and the Tie-galleries entire, including pin-rails, shall be constructed of iron or steel, and the floor of said galleries shall be composed of iron or steel beams, filled in with fireproof materials, and no wood boards or sleepers shall be used as covering over beams, but the said floors shall be entirely fireproof.

Sect. 474. Rigging Loft.

The gridiron or rigging loft shall have a lattice iron floor, and be readily accessible by iron stairways.

Sect. 475. Combustible Materials Made Fireproof—Paint.

All stage scenery, curtains, and decorations made of combustible material, and all woodwork on or about the stage, shall be painted or saturated with some non-combustible material, or otherwise rendered safe against fire.

And the finishing coats of paint applied to all woodwork throughout the entire building shall be of such kind as will resist fire to the satisfaction of the Inspector of Buildings.

Sect. 476. Fireproof Construction — Where Required

The roof over the auditorium and the entire main floor of the auditorium and vestibule, also the entire superstruction over the entrance, lobby, and corridors, and all galleries and supports for the same in the auditorium, shall be constructed of iron or steel and fireproof materials, not excluding the use of wood floor boards and necessary sleepers to which to fasten the same to. But such sleepers shall not mean timbers of support, and the space between the sleepers, excepting the portion under the stepping in the galleries, which shall be properly fire-stopped, shall be solidly filled with incombustible material up to the under side of the floor boards.

Sect. 477. Gallery Fronts Fireproof

The front of each gallery shall be entirely formed of fireproof materials, except the capping, which may be made of wood.

Sect. 478. Ceiling Fireproof

The ceiling of the auditorium and under each gallery shall be entirely formed of fireproof materials.

Sect. 479. Metal Laths

All lathing, whenever used, shall be of wire or other metal on metal studding.

Sect. 480. Fireproof Partitions

The partitions in that portion of the building which contains the auditorium, the entrance and vestibule, and every room, and passage, devoted to the use of the audience, shall be constructed of fireproof materials, including the furring of outside or other walls.

None of the walls or ceiling shall be covered with wood sheathing, wood wainscoting, canvas, or any combustible material.

But this shall not preclude the construction of a wood sounding board over the orchestra pit when the same extends back of and below the overhang of the stage, provided the said wood sheathing be properly fire-stopped by a twelve inch brick wall back of same, and also have a proper fireproof construction directly under the overhang of the stage extending from the brick wall to the apron of the stage.

Sect. 481. Dressing Rooms — Walls — Partitions

Actors' dressing rooms shall not be placed on the stage, under the stage, over the stage, on the fly-galleries, nor under the auditorium, but shall be placed in a separate section provided for that purpose.

The walls separating said section containing the actors' dressing rooms from the stage shall not be less than twelve inches in thickness, and the opening therefrom to stage shall be protected with standard self-closing firedoors.

The partitions dividing the dressing rooms, together with the partitions of every passageway from the same to the stage, and all other partitions on or about the sides of the stage, or fireproof portion thereof, shall be constructed of fireproof material and approved by the Inspector of Buildings. All doors in any of said partitions shall be standard fire-doors.

Sect. 482. Dressing Room Exits

All dressing rooms shall have an independent exit leading directly into a court or street, and shall be ventilated by windows in the external wall.

Sect. 483. Shelving

All shelving and cupboards in each and every dressing room, property room, or other storage rooms, shall be constructed of metal, slate or some fireproof material.

Sect. 484. Windows

All windows, where accessible, except as in this Title otherwise specified shall be arranged to open.

None of the windows in outside walls shall have fixed sashes, fixed iron grills or bars; these may be arranged to hinge or lock, but must be left unlocked during performances.

Sect. 485. Seats

All seats in the auditorium excepting those contained in boxes, shall be not less than thirty-two inches from back to back, measured in a horizontal direction, and firmly secured to the floor. No seat in the auditorium shall have more than six seats intervening between it and the aisle, on either side.

No stool or seat shall be placed in any aisle.

Sect. 486. Platforms For Seats

All platforms in galleries formed to receive the seats shall be not less than thirty-two inches in width from back to back of seats.

Sect. 487. Aisles—Width

All aisles on the respective floors in the auditorium, having seats on both sides of same, shall be not less than three feet wide where they begin, and shall be increased in width towards the exits in the ratio of one and one-half inches to five running feet. Aisles having seats on one side only, shall be not less than two feet six inches wide at their beginning, and increased in width the same as aisles having seats on both sides.

Sect. 488. Foyers, Etc.—Capacity

The aggregate capacity of the foyers, lobbies, corridors, passageways, and rooms for the use of the audience, not including aisle space between seats, shall on each floor or gallery, be sufficient to contain the entire number to be accommodated on said floor or gallery, in the ratio of one hundred fifty superficial feet of floor room for every one hundred persons.

Sect. 489. Gradients to be Used

Gradients or inclined planes shall be employed instead of steps where possible to overcome slight differences of level in or between aisles, corridors, and passages.

Sect. 490. Number of Exits

Every theatre accommodating three hundred persons or less shall have at least two exits; where accommodating five hundred persons, at least three exits shall be provided.

Sect. 491. Doorways—Width—Doors Open Outwardly

Doorways of exit or extrance for the use of the public shall be not less than five feet in width, not including the fire exit doorways, and for every additional one hundred persons or fraction thereof in excess of five hundred to be accommodated, an aggregate of twenty inches additional exit width must be provided.

All doors of exit or entrance shall open outwardly and be hung to swing in such a manner as not to become an obstruction in a passage or corridor, and no such door shall be closed or locked when the building is open to the public.

Sect. 492. Exits for Galleries

Distinct and separate places of exit and entrance shall be provided for each gallery above the first gallery.

Sect. 493. Exit for Auditorium and First Gallery

A common place of exit and entrance may serve for the main floor of the auditorium and the first gallery, provided its capacity be equal to the aggregate capacity of the outlets from the main floor and said gallery.

Sect. 494. Passageway—Width

No passage leading to any stairway communicating with any entrance or exit, not including fire exits, shall be less than four feet in width in any part thereof.

Sect. 495. Stairs.

All stairs within the building shall be constructed of fireproof material throughout as is elsewhere in this Code required.

Stairs from balconies and galleries shall not communicate with the basement or cellar.

All stairs shall have treads of uniform width and risers of uniform height throughout in each flight.

Sect. 496. Stairways—Width

No stairways from galleries shall be less than four feet in width. Where accommodation is provided in a gallery for more than one hundred people, there shall be at least two stairs extending to the ground arranged on opposite sides of gallery, and for every additional fifty people to be accommodated, six inches shall be added to the width proportionately divided between the two flights.

The width of all stairs shall be measured in the clear between hand-rails.

In no case shall the risers of any stairs exceed seven and one-half inches in height, nor shall the treads, exclusive of nosings, be less than ten and one-half inches wide in straight stairs.

No circular or winding stairs for use of the public shall be permitted.

Sect. 497. Number of Staircases—Location —Width

Where the seating capacity is for more than one thousand people, there shall be at least two independent staircases, with direct exterior outlets provided for each gallery in the auditorium. Where there are not more than two galleries, the stairs shall be located on opposite sides of said galleries. Where there are more than two galleries, one or more additional staircases shall be provided, the outlets from which shall communicate directly with the principal exit or other exterior outlets.

All said staircases shall be of width proportioned to the gallery accommodations as elsewhere herein prescribed. Where the seating capacity is for one thousand people, or less, two direct lines of staircases only shall be required, located on opposite sides of the galleries, and in both cases shall extend from the sidewalk level to the upper gallery, with outlets from each gallery to each of said staircases.

Sect. 498. Stage Exits

At least two independent direct exterior outlets shall be provided for the service of the stage and shall be located on opposite sides of the same.

Sect. 499. Inside Stairways

All inside stairways leading to the upper galleries of the auditorium shall be inclosed on both sides with walls of fireproof materials. Stairs leading to the first or lower gallery may be left open on one side, in which case they shall be constructed as herein provided for similar stairs leading from the entrance hall to the main floor of the auditorium. But in no case shall stairs leading to any gallery be left open on both sides.

Sect. 500. Landing for Stairs Turning on Themselves

When straight stairs turn directly on themselves, a landing of the full width of both flights shall be provided, without any steps. The outer line of landings shall be curved to a radius of not less than two feet, to avoid square angles. Stairs turning at an angle shall have a proper landing without winders introduced at said turn.

Sect. 501. Winders Prohibited

In stairs where two flights connect with one main flight, no winders shall be introduced, and the width of the main flight shall be at least equal to the aggregate width of the side flights. All stairs shall have proper landings introduced at convenient distances.

Sect. 502. Hand Rails on Sides

All inclosed staircases shall have, on both sides, strong hand-rails, firmly secured to the wall about three inches distant therefrom and about three feet above the stairs, but said hand-rails shall not run on level platforms and landings where the same are of greater length than the width of the stairs.

Sect. 503. Hand Rails in Center

All staircases eight feet and over in width shall be provided with a center hand-rail of metal, not less than two inches in diameter, placed at a height of about three feet above the centre of the treads, and supported on wrought metal or brass standards of sufficient strength, placed not nearer than four feet nor more than six feet apart, and securely bolted to the treads or risers of stairs or both, and at the head of each flight of stairs, on each landing, the post or standard shall be at least six feet in height, to which the rail shall be secured.

Sect. 504. Steam Boilers—Where Located

Every steam boiler which may be required for heating or other purposes, shall be located outside of the building, in an extension, but in no cases under or within any portion of the building used for theatrical purposes, and the space allotted to the same shall be inclosed by walls of masonry on all sides, and the ceiling of such space shall be constructed of fireproof materials. All doorways in said walls connecting with the building shall have standard automatic sliding fire-doors.

Sect. 505. Floor Registers Prohibited

No floor register for heating, ventilating or other purposes shall be permitted.

Sect. 506. Aisles to be Unobstructed

No coil or radiator shall be placed in any aisle or passageway used as an exit, and thereby reduce the same to less than the width required by this Title; but all said coils and radiators shall be placed in recesses formed in the wall or partition to receive the same.

Sect. 507. Pipes Incased

All supply, return, or exhaust pipes shall be properly encased where passing through floors or near woodwork.

Sect. 508. Standpipes — To Be Separate — Spanners—Pipes Filled

Stand pipes of not less than four inches in diameter shall be provided with hose connections by proper valves discharging downward as follows: One on each side of the auditorium in each tier, one on each side of the stage in each tier, one within ten feet of the door of the property room, one within ten feet of the door of the carpenter's shop and scenery storage room.

All of such stand pipes and hose connections shall be kept clear of obstructions.

Said stand pipes shall be separate and distinct, receiving their supply of water direct from the street main, one for the auditorium and one for the stage, and shall be fitted with regulation couplings of the fire department, and be ready for immediate use at all times during a performance in said building. When the pressure of the street water service is not sufficient to provide an efficient working pressure at the hose nozzle or sprinkler outlets, then the stand pipes shall be kept filled with water by means of an automatic pump or pumps of sufficient capacity to supply all the fire lines connected therewith.

One spanner shall be located at each hose connection.

Pipes shall be kept constantly filled with water under pressure and be ready for immediate use at all times.

Sect. 509. Siamese Connections

In addition to the requirements contained in this Title the stand pipes shall have a Siamese steamer connection and conform to all other requirements contained in this Code covering stand pipe installation.

Sect. 510. Hose to be Attached to Connections

A sufficient quantity of approved linen hose not less than two and one-half inches in diameter, in not less than fifty foot lengths, nor less than fifty feet in total length, shall be kept attached to each hose connection. Hose shall be fitted with washers and equipped with couplings and nozzles, the thread of which shall be uniform with that in use by the local Fire Department.

The stand pipe equipment above described shall be installed independently of and without connection to the automatic sprinkler system required under this Title.

Sect. 511. Automatic Sprinklers — Independent. Water supply

A system of automatic sprinklers approved by the Inspector of Buildings, shall be installed throughout the entire stage section of the theatre located in the rear of the proscenium wall; this to include under roof, under gridiron, under galleries, under the stage, in all dressing rooms, in all workshops, property, and all other rooms and passageways on said stage.

There shall be an independent water supply to the sprinklers which shall consist of

(a) Automatic fire pumps of at least five hundred gallons capacity; or

(b) Approved steel pressure tank of not less than seventy-five hundred gallons capacity, located not lower than the highest line of sprinklers; or

(c) Direct supply from city water mains where the pressure is sufficient to maintain not less than twenty-five pounds at highest line of sprinklers where same are in operation.

Sect. 512. Outside Siamese Steamer Connections

In addition to one or more of the above required supplies, there shall be a Siamese steamer connection placed on the outside of the building at each street front, installed as described in this Code, and with suitable iron plates with raised letters securely attached to the wall near steamer connection reading "Stage Sprinklers."

The location and spacing of sprinkler heads and the schedule of pipe sizes shall conform to the standard recommended by the Inspector of Buildings, which is hereby made a part of the requirements of this Code.

Sect. 513. Casks and Pails of Water

There shall be kept in readiness for immediate use one forty-gallon cask filled with water and six fire pails on each side of the stage, under the stage, on each fly-gallery, and a supply of fire pails in property and other storerooms, and in each workshop; said casks and buckets shall be painted red and lettered "For Fire Purposes Only."

Sect. 514. Chemical Fire Extinguishers

There shall also be provided six three-gallon approved chemical fire extinguishers, at least four axes, two twenty-feet hooks, two fifteen-feet hooks, and two ten-feet hooks on the stage, and such other appliances as may be required by the Board of Fire Engineers.

Sect. 515. Building to be Properly Lighted

Every portion of the building devoted to the uses or accommodation of the public, also all outlets leading to the streets, and including the open courts and corridors, shall be well and properly lighted during every performance and shall remain lighted until the entire audience has left the premises.

Sect. 516. Exit Lights

There shall be one light within a red globe or lantern, placed over each exit opening, on the auditorium side of the wall, which shall be kept lighted throughout the whole performance and until every person has left the auditorium. Approved candles for lighting shall be kept at each exit.

Sect. 517. Gas and Electric Connections — Control

Gas mains and electric light wires supplying the building shall have three independent connections as follows: One for the stage door, one for the auditorium, excepting the exits lights therein, and the third for the halls, corridors, lobbies, exit lights, including the exit lights in the auditorium, and such portions of the building used by the audience outside of the auditorium proper.

All gas and electric lights in the halls, corridors, lobbies, and other portions of the building used by the audience, with the exception of the auditorium proper, but including the exit lights therein, shall be controlled by two separate switches or valves, one to be located in the lobby and the other to be so located as to be operated from the outside of the building.

Provisions shall be made for shutting off all gas at a point outside of the building.

When interior gas lights are not lighted by electricity, other suitable appliances, to be approved by the Inspector of Buildings, shall be provided.

Sect. 518. Lights to be Protected

All suspended or bracket lights surrounded by glass, in the auditorium, or in any part of the building devoted to the public, shall be provided with proper wire netting.

o gas or electric light shall be recessed in the
, woodwork, ceilings, or in any part or the build-
unless protected by fireproof materials.

ll lights in passages or corridors in said buildings,
wherever else deemed necessary by the Inspector
ldings, shall be guarded with proper wire net-

•

e footlights, when not electric, in addition to the
network, shall be guarded with strong wire
d and chain drawn taut placed not less than two
distant from said footlights, and the trough con-
ng said footlights shall be formed of and sur-
ded by fireproof materials.

ll border lights shall be constructed according to
best known methods and subject to the approval

of the Inspector of Buildings and shall be suspended for not less than ten feet therefrom by wire rope or iron chain.

All ducts or shafts used for conducting heated air from the main chandelier, or from any other light or lights, shall be constructed of metal and made double, with an air space between, or some other approved fireproof material may be used.

Sect. 519. Stage Lights

All stage lights shall have strong metal wire guards or screens, not less than eight inches in diameter, so constructed that any material in contact therewith, shall be out of reach of the flames of said stage lights, and such guards or fixtures shall in all cases be soldered to the fixture.

Sect. 520. Calcium Lights

The bridge calcium lights at sides of proscenium shall be inclosed in front and on the side by galvanized iron so that no drop can come in contact with the lights. Electric calcium so called are included in the above requirements.

Sect. 521. Stand Pipes, Etc.—How Installed

The stand pipes, gas pipes, electric wires, hose, footlights, and all apparatus for the extinguishing of fire or guarding against the same, as in this Title specified, shall be installed to the satisfaction of and be in charge of and under the control of the Chief of the Fire Department and the Inspector of Buildings, and the said officials are hereby directed to see that the arrangements in respect thereto are carried out, enforced and maintained.

Sect. 522. Diagram of Building on Program

A diagram of plan of each tier, gallery, or floor showing distinctly the exits therefrom, each occupying a space not less than fifteen square inches, shall be printed in black lines in a legible manner on the program of the performance.

Sect. 523. Exits Marked

Every exit shall have over the same on the inside the word EXIT painted in legible letters not less than eight inches high.

Where two or more exits are required, they shall be as far removed, one from another, as is practical.

Sect. 524. Standard Fire Escapes

Unless otherwise provided in this Code, all fire escapes required shall be a "Standard" fire escape.

Sect. 525. Moving Picture Machines

Arc lamp used as a part of moving picture machines must be constructed similar to arc lamps of theatres, and wiring of same must not be of less capacity than No. 6 B. & S. gage. See National Electrical Code.

Rheostats must conform to requirements for theatre arcs.

Top reel must be incased in a steel box with hole at the bottom only large enough for film to pass through, and cover so arranged that this hole can be instantly closed. No solder to be used in the construction of this box. A steel box must be used, for receiving the film after being shown, with a hole in the top only large enough for the film to pass through freely, with the cover so arranged that this hole can be instantly closed. An opening may be placed at the side of the box to take the film out, with a door hung at the top, so arranged that it cannot be entirely opened, and provided with a spring catch to lock it closed. No solder to be used in the construction of this box.

The handle or crank used in operating the machine must be secured to the spindle or shaft, so that there will be no liability of its coming off and allowing the film to stop in front of the lamp.

A shutter must be placed in front of the condenser, arranged so as to be readily closed.

Extra films must be kept in metal box with tight fitting cover.

Machines must be operated by hand (motor driven will not be permitted).

Picture machine must be placed in an inclosure or house made of suitable fireproof material, be thoroughly ventilated and large enough for operator to walk freely on either side of or back of machine. All openings into this booth must be arranged so as to be entirely closed by doors or shutters constructed of the same or equally good fire-resisting material as the booth itself. Doors or covers must be arranged so as to be held normally closed by spring hinges or equivalent devices.

TITLE XXIV

AUTOMOBILE GARAGES AND SHELTERS

Sect. 526. Private Garages

Buildings or shelters housing not more than three automobiles containing live tanks of gasoline or other inflammable fluid devoted exclusively to the private uses of any owner or his family shall be deemed stables or barns and if not in conflict with any other city ordinances or the further provisions of this Title, shall be regulated as proscribed for stables.

Sect. 527. Public Garages

All garages or barns accommodating more than three automobiles with live tanks of gasoline or other inflammable fluid used either for private or public livery or temporary shelter purposes, shall be deemed public garages.

No building hereafter erected shall be used as a public garage nor shall any existing building be converted to such use unless the same is of at least "Mill" construction. Provided, however, that the walls and floors of all buildings hereafter erected, enlarged or remodeled, to be used as pubic garages, within the fire limits, shall be of fireproof construction and the under side of the roofs protected by fireproof materials to the satisfaction of the Inspector of Buildings.

TITLE XXV

STABLES

Sect. 528. Location

All stables shall be so planned and placed upon the building site as to secure proper natural light and ventilation for the animals occupying the same and for the benefit of persons occupying adjoining premises.

All stables hereafter erected shall be not less than eight feet from other buildings to be used or occupied as a permanent habitation by men, women or children; and shall have windows opening on to streets, courts or yards. It shall also be unlawful to locate a new building to be used as a habitation, less than eight feet from an existing stable.

Sect. 529. Ventilation Shaft in Stables

Every building which is or hereafter will be arranged for the keeping of horses, mules or cattle, shall be provided with a ventilating shaft of suitable size and height, to secure proper ventilation without making it necessary that animals shall be exposed to cold draughts and severe weather.

Sect. 530. Exits From Stables

Every livery stable or stable in which animals are kept in stalls, shall have an exit at each end of that portion, not less than six feet in width, and wherever runways or inclines are necessary they shall be so arranged as to best facilitate taking animals from the building, shall be not less than six feet in width, and no exit shall be blocked by wagons or otherwise. When animals are kept in a basement or on the second story, proper exits, doors or inclines shall be provided. Such basement shall be one-third out of the ground, well lighted and ventilated and properly drained.

Sect. 531. Construction of Stables

No buildings shall hereafter be erected, altered or reconstructed for stabling animals above the first or ground floor unless the building be of fireproof construction throughout.

Sect. 532. Manure Pits

All manure pits shall be provided with substantial walls of masonry, a suitable ventilator shaft extending through the interior of the stable and proper openings for removing the contents. Openings to manure pits shall be entirely covered with fly screens during the time from April to November.

Sect. 533. Location on Lot

No stable or barn shall be located nearer the street line than the building next adjoining farthest from said street line, provided said adjoining building or either of them is used or intended to be used as a public building, tenement house, dwelling or hotel.

TITLE XXVI

LIGHT AND VENTILATION

Sect. 534. Plan and Location

All buildings shall be so planned and placed upon their building sites as to secure proper natural light and ventilation for the occupants thereof, and for this purpose, as well as for better fire protection, open courts, yards, areas, windows, ventilator shafts, floor lights and skylights shall be provided in accordance with the following sections.

Sect. 535. Measurement of Courts

Courts, yards and light wells shall be measured in the clear of all projections into them, except roof leaders, wall coping, sills, and open fire escapes not exceeding four feet in width.

Sect. 536. Width of Outer Courts

Where an outer court is situated between wings or parts of the same building, or between different buildings on the same lot, the width of the said court measured from wall to wall of buildings three stories and basement in height shall be not less than eight feet in any part; and for every story of increase above three stories and basement in the height of said building, such width shall be increased twelve inches throughout the entire height of said court; for every story of decrease in the height of the said building below three stories such width of the said court may be decreased one foot.

Sect. 537. Width of Outer Courts on Lot Line

Where one side of an outer court, is situated on the lot line the width of the said court, measured from the lot line to the opposite wall of the building three stories and basement in height, shall be not less than four feet in width in any part; and for every story of increase above three stories and basement in height of the said building, such width shall be increased six inches throughout the entire height of the said court; for every story of decrease in the height of the said building below three stories and basement, such width of the said court may be decreased one foot.

Sect. 538. Width of Inner Courts

Where an inner court is not situated on a lot line, but is inclosed on all four sides, the least horizontal dimension of the said court for buildings three stories and basement in height shall be not less than twelve feet; for every story of increase above three stories and basement in the height of the said building, the said court shall be increased one foot in each horizontal direction, throughout the entire height of said court; and for every story of decrease in the height of the said building below three stories and basement, the horizontal dimensions of the said court may be decreased six inches in each direction.

Sect. 539. Width of Inner Courts on Lot Line

Where one side of an inner court is situated on the lot line, the width of the said court measured from the lot line to the opposite wall of the building three stories and basement in height, shall be not less than six feet in any part, and its other horizontal dimensions shall be not less than twelve feet in any part; for every story of increase in the height of the said building above three stories and basement, such width shall be increased six inches throughout the entire height of the said court; and the other horizontal dimensions shall be increased one foot throughout the entire height of said court.

For every story of decrease in the height of the said building below three stories and basement, such width may be decreased six inches throughout the entire height of said court; and the other horizontal dimensions may be decreased one foot.

Sect. 540. Percentage of Lot Occupied

No apartment house or tenement house hereafter erected shall occupy more than ninety percentum of a corner lot or more than seventy percentum of any other lot provided that the space occupied by outside fire escapes or open stairways projecting not more than four feet shall not be deemed a part of the lot occupied.

For the purpose of this section the measurements shall be taken at the ground level, except that where any such building has a store on the first story, and that story is or is intended to be occupied for business purposes only the measurements as to percentage of lot occupied may be taken at the level of the second story floor beams.

No building already existing shall be moved or enlarged in a manner that will be in violation of the requirements of this section.

Sect. 541. Number of Rooms

Every living apartment in which cooking is done exclusive of the water-closet and bath room, shall have not less than two rooms, one of which shall have not less than 80 square feet of floor area and the other not less than 120 square feet of area, and every suite of apartments in a tenement containing a greater number of rooms shall have at least one room of 120 square feet of area.

Sect. 542. Height of Ceiling

Rooms used for dwelling purposes shall be in every part not less than eight feet high from finished floor to finished ceiling provided that an attic room need be eight feet high in but one-half its area.

Alcove rooms must conform to all the requirements of other rooms.

Sect. 543. Window Openings

In every apartment house or tenement house hereafter erected every room shall have at least one window opening directly upon the street, or upon a yard or court.

Sect. 544. Window Area Proportioned to Room

In every apartment house or tenement house hereafter erected the total window area in each room, except water-closet compartments and bath rooms, shall be at least one-tenth of the superficial area of the room, and the top of at least one window shall be not less than seven feet above the floor and the upper half of it shall be made so as to open the full width.

No such window shall be less than twelve square feet in area between the stop beads.

Sect. 545. Public Hallways

In every apartment house or tenement house hereafter erected every public hallway, that is, a corridor not within an apartment, and the stair halls shall have at least one window opening directly upon the street or upon a yard or court, two feet six inches wide by five feet high, measured between stop beads.

In every apartment house or tenement house hereafter erected where the public hall is provided with a door opening to the outer air and having glass panels a window need not be provided as hereinbefore stated.

Sect. 546. Offsets in Courts

No window, except windows of water-closet compartments, bath rooms or halls shall open upon any offset or recess less than six feet in width.

Sect. 547. Windows at Angles of Courts

Nothing contained in these sections concerning outer and inner courts shall be construed as preventing windows at the angles of said courts.

Sect. 548. Courts May Start at Second Story

When a building hereafter erected has a store in the first story, and that story is, or is intended to be occupied for business purposes only, the outer and the inner courts may start at the level of the second story floor beams.

Sect. 549. Open Light Wells

Open light wells shall not be permitted to extend through from floor to floor in any building over two stories high unless the walls of light well are constructed as prescribed in Title IX. Where light is required in the interior of a building light wells therein shall be of no less dimensions than an inner court and shall have either the entire opening on each floor covered over with floor lights, of equal strength of the floor, or be inclosed as stated in this Code.

Sect. 550. Sanitary Cellars or Basements

All cellars or basements shall be ventilated from at least two opposite sides through windows. Where areas are employed for the lighting or ventilation of basements or cellars which are used for other than storage purposes, such areas shall never be less than three feet in width in the clear, extending at least six inches on either side of the extreme window of the portion so occupied, and not less than twelve inches below the window sill.

Sect. 551. System of Ventilation

Every hall, auditorium, or room of every building hereafter erected for, or converted to use as a store, schoolhouse, factory, workshop, theatre or place of public assembly or entertainment, shall have in continuous operation while occupied a system of ventilation so contrived as to provide twenty-five cubic feet per minute of outer air for each occupant and for each light other than an electric light.

Or when any room or space is so proportioned as not to allow each occupant, if children, six hundred cubic feet, and if adults one thousand cubic feet of fresh air per hour, or less than three times such amounts, in sick rooms or hospitals, by natural means without exposure to improper air currents, then such rooms shall be ventilated by artificial means.

Sect. 552. Windows in Water-Closet Compartments

In every building hereafter erected the total window or skylight area in every water-closet compartment or bath room shall not be less than three square feet, and no such window or skylight shall be less than one foot in width, measured between stop beads. In every such compartment that contains more than three plumbing fixtures, the window or skylight area given above shall be increased one square foot for each additional fixture in excess of three, and when a skylight is provided it shall contain an automatic ventilator or ventilators of an area of at least twenty-eight square inches for each fixture.

Sect. 553. Living Rooms in Basement.

In no now existing or new tenement shall any room in the cellar be constructed, altered, converted or occupied as a dwelling; and no room in the basement of a tenement house shall be constructed, altered, converted or occupied as a dwelling unless such room shall be at least eight feet high in every part from the floor to the ceiling, one third of which is above the grade at the building. There shall be appurtenant to such room or apartment a water-closet conforming to the Building and Health regulations relating to water closets.

Sect. 554. Cellar Floors—Bottoms of Shafts and Areas

The floor of the cellar, basement, bottom of light shaft and area in every apartment house, tenement house, lodging house, hotel, workshop, factory, school, church, hospital, asylum and buildings occupied as stores shall be concreted not less than four inches thick. Where wood floors are to be laid in such cellar and basement the sleepers shall be placed on top of the concrete.

Sect. 555. Privacy.

In every apartment of three or more rooms in any house used as a dwelling hereafter erected, access to every living room and bedroom and to at least one water-closet compartment shall be had without passing through any bedroom.

Sect. 556. Inclosure of Water-Closets

In every tenement hereafter erected there shall be a separate water-closet.

Every water-closet and bath hereafter placed in any tenement shall be placed in a compartment completely separated from every other room by lath and plaster partitions, the partition to extend to the ceiling. Such compartment shall be not less than two feet four inches wide and four feet deep.

Sect. 557. Space Beneath Plumbing Fixtures Left Open

All spaces under sinks, bathtubs and water-closets hereafter located in any tenement shall be left open. The floors and wall surfaces beneath and around sinks and water-closets shall be maintained in good order and repair.

Sect. 558. Temporary Water-Closets

During the process of erection or of extensive repairs of buildings, a temporary water-closet connected with the sewer or a privy with a vault outside of the building, must be provided for the workmen and maintained in a sanitary condition.

TITLE XXVII

ELECTRIC WORK AND GAS PIPING

Sect. 559. Electrical Work Done—How

No electrical wiring or installation of electrical apparatus or appliances for furnishing light, heat, and power shall be introduced into or placed in any building or structure in the city of Manchester except in mpliance with the rules and regulations of the

National Board of Fire Underwriters, known as the "National Electrical Code," and the said rules and regulations are hereby made a part of the requirements of this Code, and it is a part of the duties of the Inspector of Buildings to see that they are complied with.

Sect. 560. Gas Mains and Meters

All gas mains entering buildings shall be thoroughly cemented into the wall. Gas meters shall not be placed underneath any stairway or in any clothes or storage closet or in the dead space between the floors under show windows, or in any fuel or furnace room. They shall be placed close to the front wall, at least four feet from the floor and as near a window as possible with an unobstructed passageway leading thereto.

All meters, mains and shut-offs within a building shall be located in an accessible, unobstructed, natural lighted, well ventilated place, in the basement if possible, and when a location in the basement is impossible, they shall be grouped on the respective floors. All piping leading from the head of the service to the inlet of the meter shall remain exposed.

Sect. 561. Size of Pipe

The size of pipe shall be governed by the following table except that no house riser shall be less than three-quarters of an inch; no house pipe shall be less than three-eighths of an inch; no pipe smaller than three-quarters of an inch shall be used between outlet of meter and outlet of range pipe, and no gas pipe shall be run so that gas will be supplied from a smaller to a larger one.

TABLE FOR GAS PIPING

Number of Burners	Size of Pipe, and Length in Feet								
	⅜in.	½in.	¾in.	1in.	1¼in.	1½in.	2in.	2½in.	3in.
1	20	30	50	70	100	150			
2		27	50	70	100	150			
3		12	50	70	100	150			
4			50	70	100	150			
5			33	70	100	150			
6			24	70	100	150			
8			13	50	100	150			
10				35	100	150			
13				22	60	150			
15				16	45	120	200	300	400
20					27	65	200	300	400
25					17	42	175	300	400
30					12	30	120	300	400
35					1	22	90	270	400
40					1	17	70	260	400
45						13	55	165	400
50							45	135	330
65							27	80	200
75						2	20	60	150
100								33	80
125								22	50
150								15	35
175									28
200									21
225									17
250									14

In figuring out the size of pipe, always start at the outlets, or extremities of the system, and work towards the meter. Of any given size pipe, do not run a longer length than the longest length given in the table for that size.

Sect. 562. Risers—Location of

Risers shall not be scattered, but shall drop together in alingment to the basement. They shall be kept at least three inches apart and should not extend more than three inches below the ceiling. The riser shall extend to a point within four feet of the proposed location of the meter and to the right of the same. No elbow can be put on the bottom of any riser or rising service; the bottom of all risers shall be fitted with a "T."

Sect. 563. House Pipes

House pipes should be so run and covered as to be readily accessible.

In making outlets, fittings must be used; bending the pipe will not be permitted.

Unions shall not be used in concealed work; all branch outlet pipes shall be taken from the sides or tops of running lines and bracket lines shall be run up from below when practicable.

Sect. 564. Quality of Pipe

The pipe shall be of the best quality of wrought iron or steel, with maleable iron fittings, and joints shall be made with white lead, or its equivalent, preferably applied to the male threads and with care so as not to clog the pipe.

Sect. 565. Location of Pipes

The rising lines of pipe in all buildings shall be carried up on inside partitions and all pipes shall be run out of the reach of frost when practical to do so.

Sect. 566. Outside Stop-Cocks

All buildings used as factories, hotels, churches, theatres, schoolhouses, jails, or for public assemblies, in which gas is used, shall have the supply pipes leading from the street mains provided with a stopcock placed in the sidewalk at or near the curb.

Sect. 567. Gas Brackets

All gas brackets shall be placed at least two feet below any ceiling or woodwork unless the same is properly protected by a shield, in which case the distance shall not be less than eighteen inches. No swinging or folding gas bracket shall be placed against any stud partition or woodwork. No gas bracket on any wood lath partition or woodwork shall be less than five inches in length, measured from the burner to the plastered surface or woodwork, and shall be at least two inches from any door or window casing. No outlet shall be placed behind any door or within four feet of any meter.

Sect, 568. Hose Outlets

No independent connection for a hose outlet shall be placed above the stiff joint on any chandelier or pendant, but such connection shall be brought down to an accessible point.

Sect. 569. Stop-Pins

All stop-pins to keys or cocks or fixtures shall be ewed into place.

Sect. 570. Extensions of Alterations

Where any material extensions or alterations are to be made the work shall be done in conformity to the provisions of this Title.

Sect. 571. Cutting

In the installation of gas piping all cutting of the structural parts of the building shall be done under the supervision of the person having such structural work in charge, and in no case shall any work be done in violation of the requirements of this Code.

Sect. 572. Capping and Inspection

After the piping is run all openings shall be closed with iron caps and in no case shall lead caps be allowed and all unused outlets shall be kept capped. All pipes shall be suitably supported and stayed with pipe hooks, straps and screws. All split pipe or defective fittings shall be removed and no pipe or defective fittings repaired with cement or lead will be allowed. No gas fitters' cement shall be used except at a fixture joint. When roughingin is completed and before the pipes are concealed all pipes shall be examined and tested, and due notice shall be given the Inspector by the fitter when the piping is ready for inspection.

Sect. 573. Tests

The gas piping in any building shall be tested airtight by the gas fitters and in the presence of the Inspector of Buildings. First, when piping is completed and before work is concealed. Said test shall be made by having all openings closed and subjecting the piping to an air pressure test that will support a column of mercury ten inches in height at least ten minutes, provided that in no case shall a spring or steam guage be used. Second, after all fixtures are in place and work is completed there shall be a final test by two inches of mercury, which shall stand five minutes.

Sect. 574. Condemnation and Removal

The Inspector shall condemn and order the removal, reconstruction or repair of any system of gas piping or portion thereof that in any way endangers life or property, and such repairs or removal shall be promptly made by the responsible party upon service of order or notice.

Sect. 575. Location of Switch-Boards and Meters Shown

A plan of all gas fittings hereafter to be placed in a building shall be filed with the Inspector of Buildings showing the size and length of the different
pes. (No scale drawing will be required.)
he location of all electric switch boards and all
ains and shut-offs shall be shown on the
ns of the building.

5. Tag of Approval

he final test is completed the Inspector of
shall affix a tag of approval just above the
nection.
s meter shall be connected to any system
placed in a building without the tag of ap-
the Inspector of Buildings affixed thereto.

TITLE XXVIII

SIGNS AND BILLBOARDS

Sect. 577. Signs and Sign Boards

Signs and sign boards mean all display boards, fences or screens used as such having letters or illustrations painted or raised thereon.

Sect. 578. Billboards

Billboards mean display boards, fences or screens used as such, having paper or other material attached thereto with letters or illustrations painted or printed thereon.

Sect. 579. Banner Signs

Banner signs mean display signs painted or printed upon cloth, with or without frames. Painted canvas signs on wooden stretchers shall be classed as wooden signs.

Sect. 580. Dimensions of

No sign or billboard shall be higher than ten feet over all; and the maximum area of any sign or billboards shall not exceed an area equal to ten by forty-two and one-half feet.

Sect. 581. Location of Boards

No sign or billboard shall be located within ten feet of the street line, or the front building line of the next building adjoining, farthest from the street line, that is used as a public building, tenement house, dwelling, hotel, office or store building.

Sect. 582. Distance from Lot Line

All signs or billboards shall be independently supported on substantial posts and be thoroughly braced and anchored against wind pressure and so placed upon lots as to leave not less than three feet in clear width of free way next to the lot or building lines at the ends or between two or more billboards.

Sect. 583. Iron Clad Boards

All boards larger in area than sixty-five square feet erected within the fire limits shall be metal clad or galvanized iron on wooden frames built of one and three-quarters stock and no wooden upright shall be less than five by five inches nor shall the brace be of less than two by six scantling.

Sect. 584. Signs on Buildings

All sign boards wider than thirty inches or exceeding in area thirty-three square feet shall be of metal, or wood, metal clad on all exposed sides; but no such signboard if it exceeds sixty-five square feet in area shall be attached to the face of a building, nor shall any such board be placed upon the roof or coping wall of a building if its area exceeds seventy-three square feet or is in excess of seven feet in height. But no sign of any kind shall be attached to or placed upon a building in such a manner as to obstruct any window or fire escape thereon, nor shall the bottom of any sign be less than three feet above the roof.

Sect. 585. Supports and Anchors

All sign boards attached to or placed upon buildings shall be thoroughly secured thereto by iron or metal anchors, bolts, staples, supports, chains, guys, or braces. No roof or sky sign shall be placed upon the cornice of a building in front of the building line or in front of the coping wall if any; nor shall there be more than one such signboard or sky sign on the roof of any building on each street front.

Sect. 586. Swinging Signs

No swinging sign shall be greater in area than eight square feet, nor shall such sign project more than four feet beyond the face of the building, provided that no swinging sign shall project over any public thoroughfare. (See Section 20, Chapter 19, of the City Ordinances.)

Sect. 587. Projecting Signs

All fixed projecting signs of a greater area than sixteen square feet shall be of metal, or wood, metal clad, and projecting signs larger than sixteen square feet but not exceeding sixty-five square feet in area, shall be of open wire work with wooden or metallic forms and letters or illustrations. No sign shall project over any public thoroughfare except electrical signs as prescribed in Section 20 of Chapter 19 of the City Ordinances.

Sect. 588. Existing Boards

All signs, sign and billboards hereafter to be erected, and all existing signs and billboards, when the same are repaired, altered or changed, shall be made in conformity to the provisions of this Title.

TITLE XXIX

MISCELLANEOUS AND PENALTY

Sect. 589. Blind Attics

Meaning the vacant space situate in a building between the roof and the finished rooms immediately below the same. All buildings hereafter so constructed and containing such space must be provided with suitable openings (other than scuttles) so arranged as to be conveniently accessible from the exterior of said building in case of fire.

Sect. 590. Demolishing a Building

In demolishing any building, story after story, commencing with the roof, shall be entirely removed or piled upon the ground.

The material in the building shall be wet down to properly lay the dust.

Sect, 591. Inspection of Elevators, Fire Escapes, and Steam Boilers

The Inspector of Buildings shall cause a careful inspection to be made of all elevators, fire escapes and steam boilers for heating purposes or the running of elevators in or under any public building or place of public assembly, in any hotel, building for offices or stores, or apartment building, whenever in the opinion of the said Inspector such inspection is deemed necessary; keep a record of the date and findings of each inspection and see that said elevators, fire escapes and boilers are maintained in a perfectly safe condition and in accordance with the provisions of the City Ordinances.

Sect. 592. Receptacles for Refuse

Receptacles for inflammable refuse in office buildings, stores, schoolhouses, and other places of public assembly shall be of metal or other non-combustible material and be provided with covers of like material.

Sect. 593. Use and Storage of Highly Inflammable Materials

The use and storage of gasoline and kerosene and other highly inflammable liquids and materials shall conform to the rules and requirements of the National Board of Fire Underwriters.

Sect. 594. Buildings to be Used as

No buildings, in any part of which are used or stored hay, straw, shavings or rags shall be occupied in any part as a dwelling, tenement, lodging house, hotel, or place of public assembly. Except that rooms for coachmen or grooms may be allowed in stables where adequate means of exit are provided.

Buildings in any part of which are used or stored hay, straw, shavings or rags shall not hereafter be moved or erected within ten feet of a tenement house, lodging house, hotel, or place of public assembly, unless the same are entirely separated by brick walls extending from the cellar floor to eighteen inches above the roof the entire height and width of the building.

Sect. 595. Bakeries and Fat Boiling

No bakery and no place of business in which fat is boiled shall be maintained in any dwelling, tenement house, apartment house, hotel, or place of public assembly which is not fireproof throughout, unless the ceiling and side walls of said place where fat boiling is done, or baking ovens are used, are made safe by fireproof materials around the same, and there shall be no openings either by door or window, dumbwaiter shafts or otherwise, between said bakery or said place where fat is boiled in any tenement house or apartment house and the other parts of the said building.

Sect. 596. Removal of Light, Combustible Refuse

All chips, shavings, dust or light combustible refuse or material shall be removed daily from any carpenter, cooper, wood-working or other shop in which combustible refuse obtains unless said shop is set apart from other grades of occupancy by an incombustible inclosure or an open space not less than ten feet in its horizontal dimensions.

Sect. 597. Lumber and Wood Piles

It shall be unlawful to pile wood to a height exceeding fifteen feet or lumber to a height exceeding thirty feet above the grade of the street or alley. No wood or lumber shall be piled in the open or in sheds for the purpose of storage, seasoning or drying within ten feet of any building except when such building is provided with fire walls next adjacent to said lumber piles or a solid fire wall shall be erected between such wood and lumber piles and adjacent property, in which case however, wood or lumber shall not be piled higher than six feet below the top of such walls. No wood or lumber shall be piled within three feet of the line of demarcation between the lot upon which the lumber is to be piled and adjoining premises.

Sect. 598. Remodeled Buildings to Conform to Code

Buildings hereafter remodeled to an extent exceeding in cost fifty per cent of the original building shall conform throughout to the requirements of this Code.

Sect. 599. Conditions Not Otherwise Provided For

Buildings or structures of a character and for purposes different from those provided for in this Code, whether temporary or permanent, shall be constructed in such manner and under such conditions as may be prescribed by the Inspector of Buildings.

Sect. 600. Inspector Acts on Matters Not in Code.

All matters and questions relating to buildings or building operations not covered or provided for in this Code shall be decided by and left to the discretion of the Inspector of Buildings and his decision shall be as final and binding as if contained in this Code.

Sect. 601. Application of Code

All provisions of this Code shall apply with equal force to all buildings, both municipal and private; United States Government buildings alone excepted.

Sect. 602. Penalty

Every person, persons, firm or corporation, violating any of the provisions of this Code, where the penalty is not otherwise prescribed, shall be fined not more than ten dollars upon conviction for each day such violation may exist.

All ordinances or parts of ordinances inconsistent herewith are hereby repealed.

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